ONE MAN CROSS CUT SAWS

WITH SUPPLEMENTARY HANDLE

*DIAMOND EDGE

Highest Grade Crucible Saw Steel Blade, Oil Tempered; Ground, Sharpened and Set; Full Polished and Etched; Thin Back

No. DE302—CHAMPION TOOTH

Beech Handle, Varnished Edges, Three Brass Screws; Beech Supplementary Top Handle.

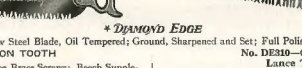
Length, Feet	2½	3	3½	4	4½	5
Weight Each, Lbs	3	4	4½	6	7	8
Each	$3.30	2.70	3.30	3.70	4.10	4.50

No. DE310—CANADIAN PATTERN
Lance Tooth, Perforated

Beech Handle, Varnished Edges, Three Brass Screws; Beech Supplementary Top Handle.

Length, Feet	2½	3	3½	4	4½	5
Weight Each, Lbs	2¾	3½	5	5¾	6½	7¾
Each	$2.00	2.00	3.50	4.00	4.20	4.60

Bridge TRADE MARK



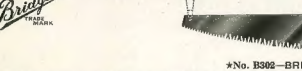
Bridge TRADE MARK

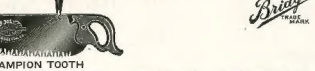
*No. B302—BRIDGE CHAMPION TOOTH

Extra Quality Crucible Saw Steel Blade, Polished and Etched; Oil Tempered, Carefully Ground, Sharpened and Set; Three Brass Screws; Beechwood Handle, Varnished Edges; Beech Supplementary Top Handle.

Length, Feet	2½	3	3½	4	4½	5
Weight Each, Lbs	2½	3¼	4½	5½	7	8
Each	$2.10	2.50	3.00	3.40	3.70	4.20

Western Territory comprises Colorado, California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. Eastern Territory, all other States.





DISSTON

High Grade Steel Blade; Perfectly Tempered, Set and Sharpened, Polished and Etched; Thin Back; Beech Handle, Varnished Edges, Brass Screws; Beech Supplementary Top Handle.

No. D302—CHAMPION TOOTH

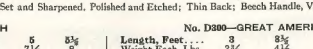
Length, Feet	3	3½	4	4½	5	5½
Weight Each, Lbs.	3¾	4¾	5½	6	7½	8
Each	$2.25	2.60	3.00	3.35	3.70	4.10
Eastern Territory	2.60	3.00	3.50	3.90	4.30	4.70
Western Territory	2.90	3.30	3.80	4.30	4.70	5.10

No. D300—GREAT AMERICAN TOOTH

Length, Feet	3	3½	4	4½	5
Weight Each, Lbs.	3¾	4½	5½	6	7
Each	$2.55	2.85	3.25	3.65	4.10
Eastern Territory	3.00	3.30	3.60	4.20	5.00
Western Territory	3.30	3.60	4.10	4.70	5.30

Loose

ICE SAWS

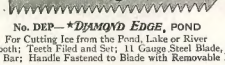


No. DEP—*DIAMOND EDGE, POND

For Cutting Ice from the Pond, Lake or River

Best Grade Polished Cast Steel; Deep, Plain Tooth; Teeth Filed and Set; 11 Gauge Steel Blade, 5 inches Wide at Point, 7 inches Wide at Butt Japanned Malleable Iron Handle, with Beech Hand Bar; Handle Fastened to Blade with Removable Bolt and Pin.

Length, Feet	4	4½	5
Weight, Lbs	11	12	13
Each	$5.20	5.80	6.90



*DIAMOND EDGE, HAND

For Use on Ice Wagons, in Cold Storage Houses and by Ice Dealers

WIDE

15 Gauge Steel Blade, Width at Heel 5⅝ inches; Japanned Malleable Iron Handle Fastened to Blade by Two Heavy Iron Rivets; Deep Plain Tooth.

Nos.	DEH24	DEH26	DEH28	DEH30
Length, Inches	24	26	28	30
Weight Each, Lbs.	2¼	3	3¼	3½
Per Dozen	$19.00	20.00	22.00	24.00

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

*NORSHAP

TWO BLADE JACKS

Cuts Three Quarter Size

Length 3¼ inches; German Silver Flush Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen

No. C2079ST—Patent Stag Handle.... **$10.00**

Length 3½ inches; German Silver Rat Tail Bolster and Flush Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C2092ST—Patent Stag Handle.... **$10.00**

Serpentine Pattern; Length 3¼ inches; German Silver Bolsters; One Large Clip and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C2080B —Buffalo Horn Handle.. **$10.00**

No. C2080ST—Patent Stag Handle.... **10.00**

Length 3⅝ inches; German Silver Flush Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1⅝ lbs.

Per Dozen

No. C2078ST—Patent Stag Handle..... **$10.00**

Length 3¾ inches; German Silver Fancy Bolster and Flush Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C2090B —Buffalo Horn Handle..... **$10.00**

No. C2090ST—Patent Stag Handle..... **10.00**

Physicians Pattern; Length 3⅝ inches; German Silver Rat Tail Bolster and Seal Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished; Brass Lined; No Shield; Weight per Dozen 1½ lbs.

Per Dozen

No. C6005B —Buffalo Horn Handle..... **$14.00**

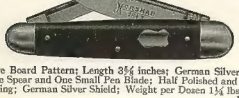
No. C6005ST—Patent Stag Handle..... **14.00**

No. C2044P —Pearl Handle..... **28.00**

Irish Congress Pattern; Length 3¾ inches; Polished Steel Rat Tail Bolster; One Large Sheep Foot and One Small Pen Blade; Half Polished and Stamped; Iron Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. C2084ST—Patent Stag Handle..... **$10.00**



Sleeve Board Pattern; Length 3¾ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C6002B —Buffalo Horn Handle..... **$10.00**

No. C6002ST—Patent Stag Handle..... **10.00**

Anglo-Saxon Pattern; Length 3¾ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C2093ST—Patent Stag Handle..... **$10.00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

★NORSHAP

TWO BLADE JACKS

Cuts Three Quarter Size

Length 3 inches; Uncapped; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C2088N—German Silver Handle..$10.00

Length 3⅝ inches; German Silver Fancy Bolster and Flush Caps; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 20 ozs.

Per Dozen

No. C0004B—Buffalo Horn Handle..$12.00
No. C0004ST—Patent Stag Handle.... 12.00

Fish Pattern; Length 3⅝ inchess; German Silver Rat Tail Bolster and Flush Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C2092B—Buffalo Horn Handle....$10.00

Anglo-Saxon Pattern; Length 3¾ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1½ lbs.

Per Dozen

No. C2081B —Buffalo Horn Handle.....$10.00
No. C2081W —White Bone Handle..... 10.00
No. C2081ST—Patent Stag Handle..... 10.00
No. C2081M —Silver Celluloid Handle..... 10.00

Anglo-Saxon Pattern; Length 3½ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen

No. C2083ST—Patent Stag Handle $10.00

Length 3¼ inches; German Silver Flush Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. C2086ST—Patent Stag Handle.....$10.00

Length 3½ inches; German Silver Rat Tail Bolster and Flush Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

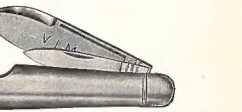
Per Dozen

No. C2091ST—Patent Stag Handle.....$10.00

Easy Opener; Length 3⅝ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. C2085ST—Patent Stag Handle.....$10.00
No. C2085M —Smoked Pearl, Celluloid Handle..... 10.00
No. C2085N —German Silver Handle..... 10.00



VIM, Easy Opener; Length 3⅝ inches; Uncapped; One Large Spear and One Small Pen Blade; Glazed and Etched; Iron Lining; No Shield; Weight per Dozen 1⅝ lbs.

Per Dozen

Vim—Iron Handle, Nickel Plated and Polished..... **$8.50**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

MARLIN REPEATING SHOT GUNS

Guaranteed for Nitro Powder

Barrels—Special Rolled Steel; Tensile Strength Over 65,000 pounds to the Square inch; Chambered for 2¾ or 2¾ inch Shells; Specially Bored for Both Black and Smokeless Powders; Fully Proved with Excessive Loads; all Full Choked Barrels, Guaranteed to Pattern More than 325 Pellets of No. 8 Chilled Shot in a 30 inch Circle at 40 Yards.

Frames and Action Parts—Best Quality Steel Obtainable for the Purpose; Cut Down from the Solid Drop Forgings to Insure Greatest Strength; Frames are Blued Finish.

Stocks—Fine, Straight Grained American Black Walnut; Length 13½ inches; Drop at Comb 1⅝ inches; Drop at Heel 2½ inches; Hard Rubber Butt Plate.

Fore-arms—New Shape; American Black Walnut, Scored for Quick Handling; Inside Reinforced with Steel Core and Ends with Metal Ferrules.

MODEL NO. 26, GRADE "A" SOLID FRAME, 6 SHOTS

STANDARD

Each

No. MA2612S—12 Gauge; 30 and 32 inch Barrels; **Full Choke Bored;** Straight Grip Stock; Weight about 7½ lbs. $32.80

BRUSH

Designed for Bird Shooting in Cover; Can be Used with Any Size of Shot, Including Buckshot

Each

No. MA2612B—12 Gauge; 26 inch Barrel; **Cylinder Bored;** Straight Grip Stock; Weight about 7 lbs. $32.80

RIOT

This is an Extra Short and Light Gun, Open Bored, for Buckshot Especially. It is a Most Deadly Arm for Guards of all Kinds, Watchmen, Express Messengers, and is kept Handy in Many Banks and Households as a Protection against Burglars, Thieves and Robbers.

Each

No. MA2612R—12 Gauge; 20 inch Barrel; **Cylinder Bored;** Straight Grip Stock; Weight about 6¾ lbs. $32.80

TRAP GUN, TAKE DOWN, 6 SHOTS

Barrels—Special Smokeless Steel; Tensile Strength Over 100,000 pounds to the Square Inch; Handles 2¾ or 2¾ inch Shells, Black or Smokeless Powder Guaranteed to Pattern More than 325 Pellets in a 30 inch Circle at 40 Yards, Using 1¼ ozs. No. 8 Chilled Shot.
Frames and Action Parts—Finest Quality Gun Frame Steel, Cut from the Solid Drop Forgings; Frames and Breech Bolts Blued Finish; Action Parts all Drop Forged Steel and Highly Polished.
Stocks—Circassian Walnut with London Oil Finish and Fine Hand Checking; Hand Made and Beautifully Modeled; Length 14 inches; Drop at Comb 1¾ inches; Drop at Heel 1 13-16 inches; Large Hard Rubber Butt Plates.
Fore-arms—Circassian Walnut with London Oil Finished and Fine Hand Checking.

STANDARD

Each

No. TM12—12 Gauge; 30 inch Barrel; **Full Choke Bored;** Straight Grip Stock; Weight about 7¾ lbs. $60.00

SPECIAL

Each

✢ **No. TMS12—12 Gauge;** 30 inch Barrel; **Full Choke Bored;** Straight Grip Stock of Special Dimensions, Made to Order Only $64.00

EXTRA INTERCHANGEABLE BARREL PORTION, COMPLETE

Each

✢ **Extra Barrel Portions for Trap Guns;** 26, 28, 30 or 32 inch: Full Choke, Modified Choke or Cylinder Bore as Desired $30.80

Ten Guns in a Case; Weight per Case about 110 lbs.

✢ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

"DIAMOND EDGE IS A QUALITY PLEDGE"

MARLIN REPEATING SHOT GUNS

Guaranteed for Nitro Powder

MODEL No. 24, TAKE DOWN, 6 SHOTS

GRADE "A"

Barrel—Special Rolled Steel; Full Choke Bored; Chambered for 2¾ or 2⅝ inch Shells.
Stock—American Black Walnut; Fine Straight Grain; Pistol Grip; Not Checkered; Rubber Butt Plate; Length 13½ inches, Drop at Comb 1⅝ inches, Drop at Heel 2½ inches.
Action Slide—American Black Walnut; New Shape, Scored for Quick Handling; Reinforced Inside with a Steel Core and on the Ends by Metal Ferrules, Taking all Strain off the Wood.
Frame—Best Quality Steel, Cut Down from Solid Drop Forgings, Blued Finish. Each
No. MA2412—12 Gauge; 30 and 32 inch Barrels; Weights 7¼ to 7¾ lbs. **$36.00**

GRADE "B"

Barrel—Special Smokeless Steel; Full Choke Bored; Chambered for 2¾ or 2⅝ inch Shells.
Stock and Action Slide—American Black Walnut; Fancy Grain; Pistol Grip and Action Slide Nicely Checkered; Rubber Butt Plate; Length 13½ inches, Drop at Comb 1⅝ inches, Drop at Heel 2½ inches.
Frame—Best Quality Steel, Cut Down from Solid Drop Forgings; Blued Finish. Each
✣ **No. MB2412—12 Gauge;** 26, 28, 30 and 32 inch Barrels; Weights 7¼ to 7¾ lbs. **$50.50**

GRADE "C"

Barrel—Special Smokeless Steel; Full Choke Bored; Chambered for 2¾ or 2⅝ inch Shells.
Stock and Action Slide—Selected Walnut, Fancy Figure; Pistol Grip and Action Slide, Nicely Checkered and Finished; Rubber Butt Plate; Length 13½ inches, Drop at Comb 1⅝ inches, Drop at Heel 2½ inches.
Frame—Best Quality Steel, Tastily Relieved and Ornamented with a Good Quality of Hand Engraving. Each
✣ **No. MC2412—12 Gauge;** 26, 28, 30 and 32 inch Barrels; Weights 7¼ to 7¾ lbs. **$68.00**

GRADE "D"

Barrel—High Quality Damascus; Full Choke Bored; Chambered for 2¾ and 2⅝ inch Shells.
Stock and Action Slide—Finest Imported Circassian Walnut; Pistol Grip and Action Slide, Checkered with the Finest Possible Hand Work; Finished by the London Process of Filling, Giving a Rich, Dull Surface that Does not Glisten or Shine and Does not Show Scratches as Plainly as the Highly Polished Wood; Rubber Butt Plate; Length 13½ inches, Drop at Comb 1⅝ inches, Drop at Heel 2½ inches.
Frame—Best Quality Steel; Elaborately Engraved with Fine Quality Hand Work; Screws and Trigger are of Tool Steel, Heavily Gold Plated. Each
✣ **No. MD2412**—12 Gauge; 26, 28 and 30 inch Barrels; Weights 7¼ to 7¾ lbs. **$150.00**

MODEL No. 16, TAKE DOWN, 6 SHOTS

GRADE "A"

Barrel—Special Rolled Steel; Full Choke Bored.
Stock and Action Slide—Plain Grain Walnut; Pistol Grip, Not Checkered; Rubber Butt Plate; Length 13¼ inches, Drop at Comb 1⅝ inches, Drop at Heel 2½ inches.
Frame—Blued Steel. Each
No. M1616A—16 Gauge; 28 inch Barrels; Weights 6½ to 6¾ lbs. **$36.00**

GRADE "B"

Barrel—Special Smokeless Steel; Full Choke Bored.
Stock and Action Slide—Fancy Grain Walnut, Pistol Grip and Action Slide, Handsomely Hand Checkered; Rubber Butt Plate; Length 13½ Inches, Drop at Comb 1⅝ inches, Drop at Heel 2½ inches.
Frame—Blued Steel. Each
✣ **No. M1616B—16 Gauge;** 26 and 28 inch Barrels; Weights 6¼ to 6¼ lbs. **$50.50**

Ten Guns in a Case; Weight per Case about 110 lbs.

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory.**

"DIAMOND EDGE IS A QUALITY PLEDGE"

MARLIN REPEATING SHOT GUNS

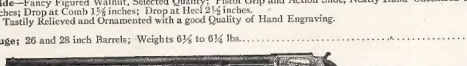
Guaranteed for Nitro Powder

MODEL No. 16, TAKE DOWN, 6 SHOTS

GRADE "C"

Barrel—Special Smokeless Steel; Full Choke Bored.
Stock and Action Slide—Fancy Figured Walnut, Selected Quality; Pistol Grip and Action Slide, Neatly Hand Checkered and Extra Fine Finished; Length 13⅛ inches; Drop at Comb 1⅝ inches; Drop at Heel 2½ inches.
Frame—Blued Steel; Tastily Relieved and Ornamented with a good Quality of Hand Engraving.

	Each
No. M1616C—16 Gauge; 26 and 28 inch Barrels; Weights 6⅛ to 6¼ lbs.	$68.00

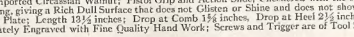


GRADE "D"

Barrel—High Quality Damascus; Full Choke Bored.
Stock and Action Slide—Finest Imported Circassian Walnut; Pistol Grip and Action Slide, Checkered with the Finest Possible Hand Work; Finished by the London Process of Filling, giving a Rich Dull Surface that does not Glisten or Shine and does not show Scratches as Plainly as the Highly Polished wood; Rubber Butt Plate; Length 13⅛ inches; Drop at Comb 1⅝ inches. Drop at Heel 2½ inches.
Frame—Best Quality Steel, Elaborately Engraved with Fine Quality Hand Work; Screws and Trigger are of Tool Steel and heavily Gold Plated.

	Each
No. M1616D—16 Gauge; 26 and 28 inch Barrels; Weights 6⅛ to 6¼ lbs.	$150.00

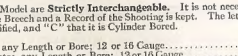
INTERCHANGEABLE BARRELS FOR MARLIN TAKE DOWN GUNS



NOTE.—All Marlin Barrel Portions of the same Model are **Strictly Interchangeable.** It is not necessary to send Action to Factory to have Barrel Fitted. All Barrels are Numbered near the Breech and a Record of the Shooting is kept. The letter "F" following this Number Indicates that the Barrel is Full Choked, "M" that it is Modified, and "C" that it is Cylinder Bored.

	Each
Grade "A"—Special Rolled Steel; Complete; any Length or Bore; 12 or 16 Gauge	$21.40
✣ **Grade "B"**—Special Smokeless Steel; Complete; any Length or Bore; 12 or 16 Gauge	30.80
✣ **Grade "C"**—Special Smokeless Steel; Complete; any Length or Bore; 12 or 16 Gauge	35.90
✣ **Grade "D"**—High Quality Damascus; Complete; any Length or Bore; 12 or 16 Gauge	77.00

EXTRA COMPLETE ACTION AND BUTTSTOCK PORTIONS



	Each
✣ **Grade "A"**—American Black Walnut; Plain Grip, not Checkered	$21.40
✣ **Grade "B"**—American Black Walnut, Checkered Grip	27.40
✣ **Grade "C"**—Selected Fancy Figured Walnut; Checkered Grip	36.80
✣ **Grade "D"**—Finest Imported Circassian Walnut; Checkered Grip	88.00

EXTRAS FOR MARLIN REPEATING SHOT GUNS

	Each
✣ Checking on Grip and Fore-arm, Style "A"	$ 6.80
✣ Changing Length or Drop of Stock, to order	13.70
✣ Selected Walnut Stock and Fore-arm, not Checked	14.50
✣ Extra Selected Walnut Stock and Fore-arm, not Checked; Dull or Polished	20.50
✣ Checking on Grip and Fore-arm, Style "B"	10.30
✣ Checking on Grip and Fore-arm, Styles "C" or "D"	17.10
✣ Engraving, Grade No. 1	6.80
✣ Engraving, Grade No. 2	13.70
✣ Engraving, Grade No. 3	20.50
✣ Engraving, Grade No. 5	34.20
✣ Engraving, Grade No. 10	68.40
✣ Engraving, Grade No. 15	102.60
✣ Special Smokeless Steel Barrel on Grade "A" Gun	10.30
✣ Best 4-Blade Damascus Barrel	29.90
✣ Silver's Recoil Pad Fitted	10.30
✣ Nickel Plated Trimmings	6.80
✣ Swivel and Sling Strap (Leather)	2.60

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

"DIAMOND EDGE IS A QUALITY PLEDGE"

METAL NOVELTY CLOCKS

MANDOLIN

Each

Mandolin—Metal Frame; **Rich Gold Finish;** Fitted with 1 Day Time Movement; 2 inch Porcelain Dial with Gilt Center and Roman Numerals; Beveled Glass; Height 8¾ inches; Width 6¼ inches; Weight 1 lb..... **$17.00**

One in a Box

(Made by Ansonia Clock Co.)

TICK TACK

Each

Tick Tack—Metal Frame; Coppered Bronze Finish and Decorated in Colors; 1 Day Time Movement; 3 inch Metal Dial with Black Roman Numerals; Height 10¼ inches; Width 5½ inches; Weight 4 lbs..... **$11.00**

LADY

Each

Lady—Metal Frame; **Rich Gold Finish;** Fitted with 1 Day Time Movement; 2 inch Porcelain Dial with Gilt Center and Roman Numerals; Beveled Glass; Height 11 inches; Width 4 inches; Weight 1 lb..... **$8.00**

Metal Cases; Fitted with High Grade American 1 Day Time Movements; 2 inch Porcelain Dials with Arabic Figures and Second Hand; Beveled Glass.

ARIEL

Each

Ariel—Ormolu **Gold Plated** Metal Case; Height 8 inches; Width 4½ inches; Fitted with 1 Day Time Movement; 2 inch Porcelain Dial with Arabic Figures; Beveled Glass; Weight 2½ lbs..... **$6.00**

(Made by New Haven Clock Co.)

Height 5 inches; Width 4¼ inches

Each

No. 510S—Pure Bright Burnished **Silver Plated. $5.00**

No. 510G—Pure Bright Burnished **Gold Plated. 5.00**

Weight 2 lbs.

Height 6 inches; Width 4¼ inches

Each

No. 509S—Pure Bright Burnished **Silver Plated. $5.50**

No. 509G—Pure Bright Burnished **Gold Plated. 5.50**

Weight 2¾ lbs.

Height 6¾ inches; Width 3¼ inches

Each

No. 512S—Pure Bright Burnished **Silver Plated. $5.00**

No. 512G—Pure Bright Burnished **Gold Plated. 5.00**

Weight 2 lbs.

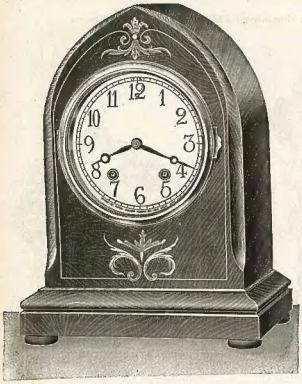
NOTE.—These Clocks Are Heavily Lacquered to Preserve the Plating

One in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

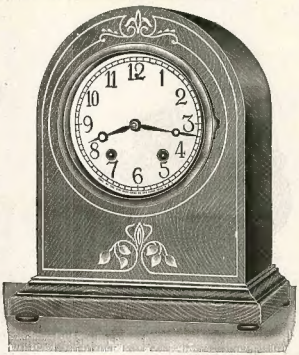
ENGLISH CABINET CLOCKS

Solid Mahogany Cases, Marquetry Inlaid; Highly Polished; Movements 8 Day, Half Hour Strike, Cathedral Gong; 7 inch Porcelain Dials, French Cast Sash, Beveled Convex Glass; Large Arabic Numerals; Blued Steel Hands; Polished Brass Hinges and Latches.



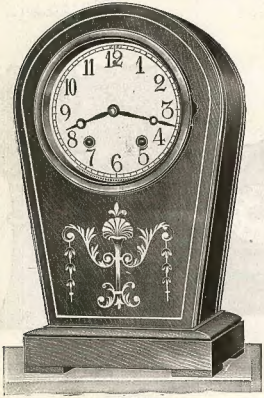
PEALE — Each

Peale—Height 13 inches; Width 9½ inches; Weight 19 lbs.....**$34.00**



PERHAM — Each

Perham—Height 12 inches; Width 10 inches; Weight 19 lbs.....**$35.00**



PENROSE — Each

Penrose—Height 14 inches; Width 8 inches; Weight 19 lbs.....**$35.00**

PACOLET — Each

Pacolet—Height 12½ inches; Width 10 inches; Weight 19 lbs....**$35.00**

One in a Wood Box

(Made by the New Haven Clock Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

METAL NOVELTY CLOCKS

Ormolu Gold Plated Metal Cases; Fitted with 1 Day Time Movements; 2 inch Dials with Arabic Figures

KAZAN

Each

Kazan—Height 6¼ inches; Width 5½ inches; 2 inch White Dial with Arabic Figures; Plain Glass; Weight 1¼ lbs..... **$2.80**
One in a Box
(Made by New Haven Clock Co.)

ARDENNES

Each

Ardennes—Height 11¾ inches; Width 4 inches; 2 inch Porcelain Dial with Arabic Figures; Beveled Crystal; Weight 3 lbs..... **$5.50**
One in a Box
(Made by New Haven Clock Co.)

BENCLARE

Each

Benclare—Height 5¾ inches; Width 4¾ inches; 2 inch White Dial with Arabic Figures; Plain Glass; Weight 7/8 lb..... **$2.50**
One in a Box
(Made by New Haven Clock Co.)

DESK

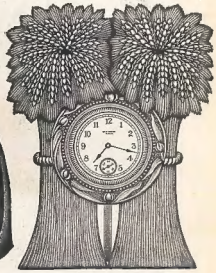
Each

No. 4051—Steel Case and Base, **Nickel Plated** and Polished; Fitted with 1 Day Time Movement; 2 inch Dial with Arabic Figures; Convex Crystal; Height 4½ inches; Diameter of Base 3⅝ inches; Weight 1 lb..... **$2.80**
Imported

TOSCA

Each

Tosca—Cast Iron Frame, Antique Bronze Finish; Fitted with 1 Day Time Movement; 2 inch Ivorine Dial with Gilt Center and Roman Numerals; Beveled Crystal; Height 6¾ inches; Width 8½ inches; Weight 2⅝ lbs..... **$3.50**
One in a Box
(Made by Western Clock Mfg. Co.)



SHEAF

Each

Sheaf—Height 7½ inches; Width 6 inches; 2 inch White Dial with Arabic Figures; Plain Glass; Weight 1⅝ lbs..... **$3.50**
One in a Box
(Made by New Haven Clock Co.)

METAL NOVELTY CLOCKS

Gold Plated Metal Cases; Fitted with One Day Time Movements; Ivorine Dials; Beveled Crystals. Movements have Self-Centered Wheels and Frictionless Pivots.

PANSY

Each

Pansy—Height 4¾ inches; Width 2¾ inches; 2 inch Ivorine Dial with Arabic Figures; Weight ¾ lb. **$3.00**

ROYAL

Each

Royal—Height 11¼ inches; Width 7½ inches; 3 inch Ivorine Dial with Roman Numerals; Weight 2½ lbs. **$2.20**

SAVOY

Each

Savoy—Height 7¾ inches; Width 3½ inches; 2 inch Ivorine Dial with Arabic Figures; Weight 1¾ lbs... **$3.50**

BOURBON

Each

Bourbon—Height 8 inches; Width 3¼ inches; 2 inch Ivorine Dial with Arabic Figures; Weight 2 lbs.... **$3.80**

IDYLS

Each

Idyls—Height 8¾ inches; Width 4½ inches; 2 inch Ivorine Dial with Arabic Figures; Weight 2½ lbs.. **$5.00**

VENICE

Each

Venice—Height 10 inches; Width 6 inches; 2 inch Ivorine Dial with Arabic Figures; Weight 3½ lbs.. **$6.00**

DORÉ

Each

Doré—Height 8¾ inches; Width 3½ inches; 2 inch Ivorine Dial with Arabic Figures; Weight 2 lbs.... **$5.00**

One in a Box

(Made by Western Clock Mfg. Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

PORCELAIN NOVELTY CLOCKS

Royal Bonn Imported Porcelain Cases, Hand Decorated in Rich Colors; One Day Time Movements; Two inch Dials with Roman Numerals; Beveled Glass Front.

ALERT

Alert—Height 6¾ inches; Width 5½ inches; Weight 1¾ lbs . . Each **$3.00**

ANVIL

Anvil—Height 6¾ inches; Width 5½ inches; Weight 1¾ lbs Each **$3.00**

ARMOR

Armor—Height 6¾ inches; Width 5½ inches; Weight 1¾ lbs Each **$3.00**

ANCHOR

Anchor Height 7 inches; Width 5 inches, Weight 1 lb . . Each **$3.00**

ACTOR

Actor—Height 7¼ inches; Width 5 inches; Weight 1 lb . Each **$3.00**

AGATE

Agate—Height 7 inches; Width 5 inches; Weight 1¾ lbs Each **$3.00**

GIPSY

Gipsy Height 6¼ inches, Width 6 inches; Weight 1½ lbs Each **$3.50**

GOBLIN

Goblin—Height 6¾ inches; Width 6 inches; Weight 1¾ lbs.. Each **$3.50**

GRAPHIC

Graphic—Height 6 ¾ inches; Width 5½ inches; Weight 1¾ lbs . . Each **$3.50**

GAZELLE

Gazelle—Height 6¾ inches; Width 5¼ inches; Weight 1¾ lbs Each **$3.50**

One in a Box

(Made by Ansonia Clock Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

PORCELAIN MANTEL CLOCKS

Royal Bonn Imported Porcelain Cases, Hand Decorated in Rich Colors; Fitted with 8 Day Half Hour Gong Striking Movements; Five inch Plain Dial with Roman Numerals; American Sash; Plain Glass.

LA SCARPE

Each

La Scarpe—Height 11¼ inches; Width 9¼ inches; Weight 50 lbs. **$9.60**
Two in a Case

LA SEINE

Each

La Seine—Height 11½ inches; Width 9¾ inches; Weight 50 lbs. **$9.60**
Two in a Case

LA SAVOIE

Each

La Savoie—Height 11¼ inches; Width 9 inches; Weight 50 lbs. **$9.60**
Two in a Case

LA SEDAN

Each

La Sedan—Height 11¼ inches; Width 9¼ inches; Weight 50 lbs. **$9.60**
Two in a Case

(Made by Ansonia Clock Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

PORCELAIN MANTEL CLOCKS

Royal Bonn Porcelain Cases, Decorated in New Art Tints, Green, Apple Green, Blue or Red; Fitted with Eight Day Half Hour Gong Striking Movements; Five inch Porcelain Dial with Roman Numerals; Visible Escapement; French or Rococo Sash; Beveled Glass.

LA NORD

	Each
La Nord—Height 11¾ inches; Width 14½ inches; Weight 27 lbs.	$18 00

One in a Case

LA LAYON

	Each
La Layon—Height 14½ inches; Width 15 inches; Weight 36 lbs.	$21 00

One in a Case

(Made by Ansonia Clock Co.)

"Diamond Edge is a Quality Pledge"

Remington

REMINGTON REPEATING SHOT GUNS

Remington

NOTE.—The Mechanical Construction of All Remington Repeating Shot Guns is the Same. They Have an Absolutely Solid Breech, Closed on Top, Loading and Ejecting of Shells is Accomplished from the Under Side, with the Advantage that Ejected Shells are Kept Away from the Face of the Shooter and from Interfering with the Aim. The Solid Breech Insures Absolute Safety to the Operator, as there is no Chance for Firing Fan, Bursted Shells, Cases or Burnt Powder Flying Back in the Face or Eyes. Breech Block Must Always be Forwarded in Order to Put Gun Together.

PUMP ACTION, TAKE DOWN, SOLID BREECH, HAMMERLESS, 6 SHOTS, BOTTOM EJECTOR, BLUED RECEIVER

MODEL 1908

No. 4, TOURNAMENT GRADE

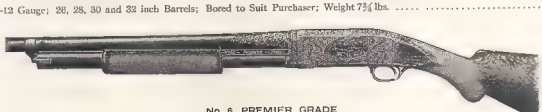
Barrel—Remington Steel, Blued Finish; Choke, Modified or Cylinder Bored
Stock—Fine English Walnut, Fine Checkered Pistol Grip and Fore End; Rubber Butt Plate; Any Length or Drop.
Receiver—Extra Scroll Engraving

	Each
✣ **No. R4T12**—12 Gauge; 26, 28, 30 and 32 inch Barrels; Bored to Suit Purchaser; Weight 7¾ lbs.	**$76 92**

No. 5, EXPERT GRADE

Barrel—Remington Steel; Blued Finish; Choke, Modified or Cylinder Bored.
Stock—Best English Walnut; Extra Checkered Pistol Grip and Fore End; Rubber Butt Plate, Silver Name Plate; Any Length or Drop.
Receiver—Fine Scroll and Game Engraving

	Each
✣ **No. R5E12**—12 Gauge; 26, 28, 30 and 32 inch Barrels; Bored to Suit Purchaser; Weight 7¾ lbs.	**$115 15**



No. 6, PREMIER GRADE

Barrel—Remington Steel; Blued Finish; Choke, Modified or Cylinder Bored
Stock—Finest Circassian Walnut; Elaborate Checkered Pistol Grip and Fore End; Rubber Butt Plate; Gold Name Plate; Any Length or Drop.
Receiver—Finest Quality Bird and Game Engraving.

	Each
✣ **No. R6P12**—12 Gauge; 26, 28, 30 and 32 inch Barrels; Bored to Suit Purchaser; Weight 7¾ lbs.	**$173 92**

Cut Shows
Remington Repeating
Shot Gun, Taken Down

EXTRA BARRELS FOR REMINGTON REPEATING SHOT GUNS

NOTE.—In All Cases Extra Barrels will have to be Fitted at the Factory, as they are not Interchangeable

	Each
✣ Extra Barrel; Remington Steel; Complete with Barrel Yoke and Lug, but without Magazine and Action Slide	**$20 26**
✣ Matting Barrel	**8 00**
✣ "Ordnance" Steel Barrels will be Furnished instead of "Remington" Steel at Extra List Price of	**8 00**

"Ordnance" Steel is of the Highest Grade, and is Especially Recommended for Heavy Charges Nitro Powder. The Tensile Strength of the Steel is 110,000 lbs., and the Elastic Limit 60,000 lbs., this being Greatly in Excess of any Strain to which Shot Gun Barrels are Subjected with Reasonable Loads of Nitro Powders.

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

"DIAMOND EDGE IS A QUALITY PLEDGE"

Remington

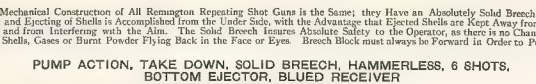
REMINGTON REPEATING SHOT GUNS

Remington

NOTE.—The Mechanical Construction of All Remington Repeating Shot Guns is the Same; they Have an Absolutely Solid Breech, Closed on Top; Loading and Ejecting of Shells is Accomplished from the Under Side, with the Advantage that Ejected Shells are Kept Away from the Face of the Shooter, and from Interfering with the Aim. The Solid Breech Insures Absolute Safety to the Operator, as there is no Chance for Firing Pin Bursted Shells, Cases or Burnt Powder Flying Back in the Face or Eyes. Breech Block must always be Forward in Order to Put Gun Together.

PUMP ACTION, TAKE DOWN, SOLID BREECH, HAMMERLESS, 6 SHOTS, BOTTOM EJECTOR, BLUED RECEIVER

MODEL 1908



No. 1—STANDARD GRADE

Barrel—Remington Steel; Blued Finish.
Stock—Walnut; Half Pistol Grip; Not Checkered; Rubber Butt Plate; Length 13⅜ inches; Drop at Comb 1⅝ inches, Drop at Heel 2¾ inches.

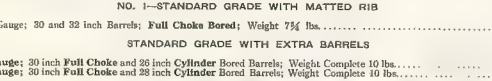
	Each
No. RR12F—12 Gauge; 28, 30 and 32 inch Barrels; **Full Choke Bored;** Weight 7½ lbs.	**$35.50**
No. RR12M—12 Gauge; 28 and 30 inch Barrels; **Modified Choke Bored;** Weight 7½ lbs.	**35 50**
No. RR12C—12 Gauge; 28 and 30 inch Barrels; **Cylinder Bored;** Weight 7½ lbs.	**35 50**

NO. 1—STANDARD GRADE WITH MATTED RIB

	Each
No. RR12FM—12 Gauge; 30 and 32 inch Barrels; **Full Choke Bored;** Weight 7¾ lbs.	**$46 50**

STANDARD GRADE WITH EXTRA BARRELS

	Each
No. RR2S12—12 Gauge; 30 inch **Full Choke** and 26 inch **Cylinder** Bored Barrels; Weight Complete 10 lbs.	**$58 90**
No. RR2S12—12 Gauge; 30 inch **Full Choke** and 28 inch **Cylinder** Bored Barrels; Weight Complete 10 lbs.	**58 90**



No. 1—FIELD GRADE

Designed for Bird Shooting in Field and Cover

Barrel—Remington Steel; Blued Finish
Stock—Walnut; Half Pistol Grip; Not Checkered; Rubber Butt Plate, Length 13⅜ inches, Drop at Comb 1⅝ inches; Drop at Heel 2¾ inches.

	Each
No. RRF12—12 Gauge; 26 inch Barrel; **Cylinder Bored;** Weight 7¼ lbs.	**$38.50**

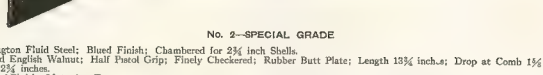
No. 2—SPECIAL GRADE

Barrel—Remington Fluid Steel; Blued Finish; Chambered for 2¾ inch Shells.
Stock Selected English Walnut; Half Pistol Grip; Finely Checkered; Rubber Butt Plate; Length 13⅜ inch.s; Drop at Comb 1⅝; inches; Drop at Heel 2¾ inches.
Receiver—Blued Finish; Matted on Top.

	Each
No. R2S12—12 Gauge; 30 and 32 inch Barrels; **Full Choke Bored;** Weight 7¾ lbs.	**.$60.00**

Each

✢ Will Furnish the Above Gun Made to Order with Stocks 13½ to 15 inches Long, and with Drops from 2¼ to 3¼ inches, without Extra Charge.



No. 3 TRAP GRADE

Barrel -Remington Fluid Steel; Blued Finish; Chambered for 2¾ inch Shells.
Stock—Selected English Walnut; Straight Grip with Full Comb; Finely Checkered; Rubber Butt Plate; Length 14 inches; Drop at Comb 1⅝ inches; Drop at Heel 2 inches.
Receiver—Blued Finish; Matted on Top.

	Each
No. RRT12—12 Gauge; 30 inch Barrel; **Full Choke Bored;** Weight 7¾ lbs.	**$68 00**

✢ Will Furnish the Above Guns Made to Order, with Stocks 13½ to 15 inches Long, and with Drops from 2 to 3¼ inches, without Extra Charge.
✢ Any Variation of Stock Dimensions Other than Those Given on above Guns, are Subject to an Additional Charge of **$13.50.**

✢ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

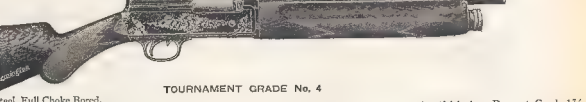
"DIAMOND EDGE IS A QUALITY PLEDGE"

REMINGTON AUTO-LOADING REPEATING SHOT GUNS

Guaranteed for Nitro Powder

NOTE.—The Mechanical Construction of all Remington Auto-loading Repeating Shot Guns is the Same. After a Shot has been Fired the Recoil Opens the Breech, Ejects the Empty Shell, Inserts a Cartridge, Cocks the Hammer and Closes and Locks the Breech, and Leaves the Arm Ready to be Fired Again by Pressing the Trigger. The Trigger must be Released and Pulled Each Time the Gun is Fired. In Consequence of the Recoil being Utilized to Operate the Mechanism, the Recoil is Largely Absorbed and the Shooter is Spared the Discomforts that Otherwise Result from the "Kick." Greatest Rapidity of Fire.

Take Down, Solid Breech, Hammerless, 5 Shots, Side Ejector, Absolutely Safe and Sure in Action
Chambered for any Length Shell up to 2¾ inches.



TOURNAMENT GRADE No. 4

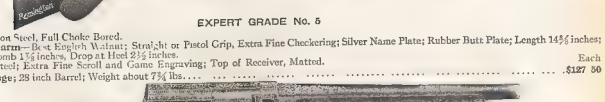
Barrel—Remington Steel, Full Choke Bored.
Stock and Fore-arm—Fine English Walnut; Straight or Pistol Grip, Fine Checkering; Rubber Butt Plate; Length 14⅜ inches; Drop at Comb 1⅜ inches, Drop at Heel 2¼ inches.
Frame—Blued Steel; Extra Scroll Engraving; top of Receiver, Matted

Each
✢ **No. 4—12 Gauge;** 28 inch Barrel; Weight about 7¼ lbs. $89 30

EXPERT GRADE No. 5

Barrel—Remington Steel, Full Choke Bored.
Stock and Fore-arm—Best English Walnut; Straight or Pistol Grip, Extra Fine Checkering; Silver Name Plate; Rubber Butt Plate; Length 14⅜ inches; Drop at Comb 1⅜ inches, Drop at Heel 2¼ inches.
Frame—Blued Steel; Extra Fine Scroll and Game Engraving; Top of Receiver, Matted.

Each
✢ **No. 5—12 Gauge;** 28 inch Barrel; Weight about 7¼ lbs. $127 50



PREMIER GRADE No. 6

Barrel—Remington Steel, Full Choke Bored.
Stock and Fore-arm—Circassian Walnut, Straight or Pistol Grip; Elaborate Checkering; Gold Name Plate; Rubber Butt Plate; Length 14⅜ inches; Drop at Comb 1⅜ inches, Drop at Heel 2¼ inches.
Frame—Blued Steel; Finest Quality Bird and Game Engraving; Top of Receiver, Matted.

Each
✢ **No. 6—12 Gauge;** 28 inch Barrel; Weight about 7¼ lbs. $191.30

EXTRA BARRELS FOR REMINGTON AUTO-LOADING SHOT GUNS

NOTE.—The Barrels and Stocks of these Guns are **Not Interchangeable.** In Order to Furnish a Gun with Extra Interchangeable Barrel it will be Necessary to have both the Stock and Action, so that the Barrel can be Fitted to the Action. Don't Sell a Customer Delivery from St. Louis and then Send in a Separate Order for an Extra Barrel to be Shipped Direct. In this Particular the Remington is Different from a Browning. The Browning would Interchange.

Each
✢ **Grade No. 1**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored. $20 40
✢ **Grade No. 1M**—Remington Steel, 26 or 28 inches, Full Choke or Cylinder Bored 20 40
✢ **Grade No. 1C**—Remington Steel, 26 or 28 inches, Full Choke or Modified Choke Bored 20 40
✢ **Grade No. 0**—Remington Steel, 26 or 28 inches, Full Choke, Modified or Cylinder Bored 28 40
✢ **Grade No. 10M**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored 20 40
✢ **Grade No. 2**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored 20 40
✢ **Grade No. 3**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored 25 50
✢ **Grade No. 4**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored 32 00
✢ **Grade No. 5**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored 38 30
✢ **Grade No. 6**—Remington Steel, 26 or 28 inches, Modified Choke or Cylinder Bored . . . . .

STOCKS

NOTE. The Standard Dimensions for Stocks on Remington Auto-loading Shot Guns are Length 14⅜ inches; Drop at Comb 1⅜ inches, Drop at Heel 2¼ inches. 14 inch Stocks will be Made to Order Only without Extra Charge.
NOTE. A 14½ inch Stock on an Auto-loading Gun Corresponds in Length most nearly with a 14 inch Stock on any Double Barrel Gun and a 13¾ inch Stock on a Pump Gun.
✢ **Any Deviation from Above Standard Stock Dimensions Made to Order Only at an Advanced Cost of $13 50**

EXTRAS FOR AUTO-LOADING SHOT GUNS

Each
✢ Checkered Grip and Fore End, Extra . . . . . $ 6 80
✢ Selected English Walnut Stock, Extra 6 80
✢ Selected English Walnut Stock, Checkered Grip and Fore-end, Extra 13.60

✢ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

SMITH & WESSON REVOLVERS

DOUBLE ACTION, HAND EJECTING

MILITARY MODEL 1905

Solid Frame; Swing Out Cylinder; Loose Hammer Nose; Provided with Front Cylinder Lock; Enlarged Breech

32 Caliber; 6 Shots; Checked Walnut Square Stock; Shoots 32 WCF Cartridges.

	Nickel Plated	Each
No. 321MM—4 inch Barrel; Weight 31 ozs.		$20.00
No. 325MM—6 inch Barrel; Weight 32 ozs.		20.00
	Blued	Each
No. 2324MM—4 inch Barrel; Weight 31 ozs.		20 00
No. 2325MM—6 inch Barrel; Weight 32 ozs.		20.00
No. 2326½MM—6½ inch Barrel, Weight 33 ozs.		20 00

38 Caliber; 6 Shots; Checked Walnut Square Stock, Shoots 38 S. & W. Special or 38 Long Colt U S Service Cartridges

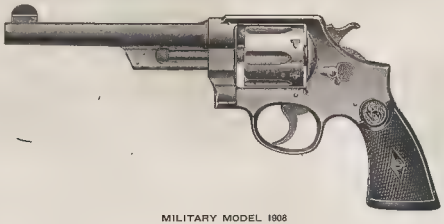
	Nickel Plated	Each
No. 384MM—4 inch Barrel; Weight 29 ozs.		$20.00
No. 386MM—6 inch Barrel; Weight 30 ozs.		20.00
	Blued	Each
No. 2384MM—4 inch Barrel, Weight 29 ozs.		20 00
No. 2385MM—6 inch Barrel; Weight 30 ozs.		20.00
No. 2386½MM—6½ inch Barrel; Weight 31 ozs.		20 00

MILITARY MODEL 1905 WITH TARGET SIGHTS

Solid Frame; Swing Out Cylinder; Loose Hammer Nose; Provided with Front Cylinder Lock; Enlarged Breech

38 Caliber; 6 Shots; **Checked Walnut Square Stock;** Target Sights, for Accurate Work; Shoots 38 S. & W. Special or 38 Long Colt U S Service Cartridges.

	Blued	Each
✢ **No. 2388½MMT**—6½ inch Barrel, Weight 31 ozs.		$22 00



MILITARY MODEL 1908

Solid Frame; Swing Out Cylinder; Loose Hammer Nose; Provided with Front Cylinder Lock; Enlarged Breech

44 Caliber; 6 Shots; Checked Walnut Square Stock; Shoots 44 S. & W. Special or 44 S. & W. Russian Cartridges

	Nickel Plated	Each
✢ **No. 4483½MM**—6½ inch Barrel; Weight 39 ozs.		$20 00
	Blued	
✢ **No. 24483½MM**—6½ inch Barrel; Weight 39 ozs.		20.00
✢ **Target Sights,** Extra.		2.00

✢ **Not Carried in Stock. Can Only be Furnished by Shipping Direct from Factory**

"DIAMOND EDGE IS A QUALITY PLEDGE"

SMITH & WESSON REVOLVERS

DOUBLE ACTION WITH AUTOMATIC SHELL EXTRACTOR

32 Caliber; 5 Shots; Rubber Handle; Shoots 32 S&W Central Fire Cartridges.

Nickel Plated

	Each
No. 32SS —3 inch Barrel; Weight 12¼ ozs	$24 00
No. 3233½S—3½ inch Barrel; Weight 12¾ ozs	24 00
No. 326S —6 inch Barrel; Weight 14½ ozs	24 00

Blued

No. 2323S —3 inch Barrel; Weight 12½ ozs	24 00
No. 2333½S—3½ inch Barrel; Weight 12¾ ozs	24.00
No. 2326S —6 inch Barrel; Weight 14½ ozs	24.00

✣ **Engraving to Order** $3.00 to $7.00 Net

38 Caliber; 5 Shots; Rubber Handle; Shoots 38 S&W Central Fire Cartridges.

Nickel Plated

	Each
No. 383½S—3½ inch Barrel; Weight 17 ozs	$26 00
No. 38SS —4 inch Barrel; Weight 17½ ozs	26 00
No. 385S —5 inch Barrel; Weight 18½ ozs	26 00
No. 386S —6 inch Barrel; Weight 19 ozs	26.00

Blued

No. 2383½S—3¼ inch Barrel; Weight 17 ozs	26 00
No. 2384S —4 inch Barrel; Weight 17½ ozs	26.00
No. 2385S —5 inch Barrel; Weight 18½ ozs	26 00
No. 2386S —6 inch Barrel; Weight 19 ozs	26.00

✣ **Engraving to Order** $3.00 to $8.00 Net

44 Caliber; 6 Shots; Rubber Handle; Shoots 44 S&W Russian Model Central Fire Cartridges.

Nickel Plated

	Each
✣ No. 44SS—4 inch Barrel; Weight 34¼ ozs	$30 00
✣ No. 445S—5 inch Barrel; Weight 35½ ozs	30 00
✣ No. 446S—6 inch Barrel; Weight 37 ozs	30 00

Blued

✣ No. 2444S—4 inch Barrel; Weight 34¼ ozs	30 00
✣ No. 2445S—5 inch Barrel; Weight 35½ ozs	30 00
✣ No. 2446S—6 inch Barrel; Weight 37 ozs	30.00

✣ **Engraving to Order** $5.00 to $15.00 Net

38 Caliber; 5 Shots; Rubber Handle; Shoots 38 S&W Central Fire Cartridges.

Nickel Plated

	Each
No. 383½SF—3¼ inch Barrel; Weight 17 ozs	$26 00
No. 384SF—4 inch Barrel; Weight 17½ ozs	26 00
No. 385SF—5 inch Barrel; Weight 18½ ozs	26 00
No. 386SF—6 inch Barrel; Weight 19 ozs	26.00

Blued

No. 2383½SF—3¼ inch Barrel; Weight 17 ozs	26 00
No. 2384SF—4 inch Barrel; Weight 17½ ozs	26.00
No. 2385SF—5 inch Barrel; Weight 18½ ozs	26 00
No. 2386SF—6 inch Barrel; Weight 19 ozs	26.00

✣ **Engraving to Order** $3.00 to $8.00 Net

44 Caliber; 6 Shots; Rubber Handle; Shoots 44 Winchester Central Fire Cartridges.

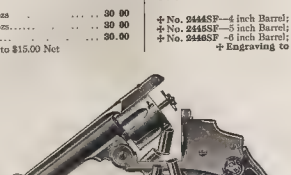
Nickel Plated

	Each
✣ No. 44SF—4 inch Barrel; Weight 34¼ ozs	$30 00
✣ No. 445SF—5 inch Barrel; Weight 35½ ozs	30 00
✣ No. 446SF—6 inch Barrel; Weight 37 ozs	30.00

Blued

✣ No. 2444SF—4 inch Barrel; Weight 34¼ ozs	30.00
✣ No. 2445SF—5 inch Barrel; Weight 35½ ozs	30 00
✣ No. 2446SF—6 inch Barrel; Weight 37 ozs	30.00

✣ **Engraving to Order** $5.00 to $15.00 Net



HAMMERLESS SAFETY, WITH AUTOMATIC SHELL EXTRACTOR, REBOUNDING LOCK AND PATENT SAFETY ATTACHMENT

32 Caliber; 5 Shots; Rubber Handle; Shoots 32 S&W Central Fire Cartridges.

Nickel Plated

	Each
No. 323SH —3 inch Barrel; Weight 14¼ ozs	$26.00
No. 3233½SH—3½ inch Barrel; Weight 14¾ ozs	26 00
No. 326SH —6 inch Barrel; Weight 16¼ ozs	26 00

Blued

No. 2323SH —3 inch Barrel; Weight 14¼ ozs	26.00
No. 2323½SH—3½ inch Barrel; Weight 14¾ ozs	26.00
No. 2326SH —6 inch Barrel; Weight 16½ ozs	26.00

✣ **Engraving to Order** $5.00 to $15.00 Net

38 Caliber; 5 Shots; Rubber Handle; Shoots 38 S&W Central Fire Cartridges.

Nickel Plated

	Each
No. 383½SH—3¼ inch Barrel; Weight 17 ozs	$28 00
No. 384SH —4 inch Barrel; Weight 17½ ozs	28 00
No. 385SH —5 inch Barrel; Weight 18½ ozs	28 00
No. 386SH —6 inch Barrel; Weight 19 ozs	28.00

Blued

No. 2383½SH—3¼ inch Barrel; Weight 17 ozs	28.00
No. 2384SH —4 inch Barrel; Weight 17½ ozs	28.00
No. 2385SH —5 inch Barrel; Weight 18½ ozs	28 00
No. 2386SH —6 inch Barrel; Weight 19 ozs	28.00

✣ **Engraving to Order** $5.00 to $15.00 Net

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

"DIAMOND EDGE IS A QUALITY PLEDGE"

SMITH & WESSON REVOLVERS

PERFECTED MODEL

Double Action with Automatic Shell Extractor

38 Caliber; 5 Shots; Rubber Handle; Side Latch; Shoots 38 S&W Central Fire Cartridges.

The Cylinder in this Perfected Model is Perfectly Locked, Assuring Proper Alignment with the Barrel. The Rebound Block Guards Against Accidental Discharge. The Shells are Automatically Extracted.

Among New Features are its Heavier Frame, its Frame and Guard in one, its Barrel and Sight in one and its Double Locking Device. In this Model for the First Time the Flat Springs, often a Source of Trouble, Have Been Replaced by the Serviceable Spiral Springs.

Nickel Plated	Each
No. 383½SWP 3½ inch Barrel; Weight 19½ ozs.	**$28.00**
No. 384SWP —4 inch Barrel; Weight 20 ozs.	**28.00**
No. 385SWP —5 inch Barrel; Weight 21 ozs.	**28.00**

Blued	Each
No. 2383½SWP—3½ inch Barrel; Weight 19½ ozs.	**$28.00**
No. 2384SWP —4 inch Barrel; Weight 20 ozs	**28.00**
No. 2385SWP —5 inch Barrel; Weight 21 ozs.	**28.00**

DOUBLE ACTION, HAND EJECTING

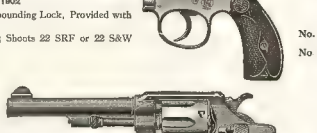
MODEL 1902

Solid Frame; Swing-out Cylinder; Rebounding Lock, Provided with Front Cylinder Lock.

22 Caliber; 7 Shots, Rubber Handle; Shoots 22 SRF or 22 S&W Rim Fire Cartridges.

Nickel Plated	Each
No. 223SN —3 inch Barrel; Weight 9½ ozs.	**$22.00**
No. 223½SN—3½ inch Barrel; Weight 10 ozs.	**22.00**

Blued	Each
No. 2223SN —3 inch Barrel; Weight 9⅝ ozs.	**$22.00**
No 2223½SN—3½ inch Barrel; Weight 10 ozs.	**22.00**



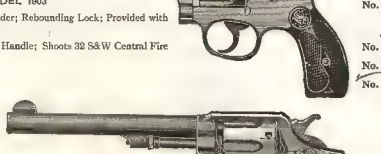
MODEL 1903

Solid Frame; Swing out Cylinder; Rebounding Lock; Provided with Front Cylinder Lock.

32 Caliber; 6 Shots; Rubber Handle; Shoots 32 S&W Central Fire Cartridges.

Nickel Plated	
No. 322½SN—3½ inch Barrel; Weight 17⅝ ozs.	**$26.00**
No. 324½SN—4½ inch Barrel; Weight 18½ ozs.	**26.00**
No. 326SN —6 in. Barrel; Weight 20 ozs.	**26.00**

Blued	
No. 2322½SN—3½inch Barrel; Weight 18¼ ozs.	**$26.00**
No. 2324½SN—4½ inch Barrel; Weight 19 ozs.	**26.00**
No. 2326SN —6 inch Barrel; Weight 20 ozs.	**26.00**



MILITARY MODEL 1902

Solid Frame; Swing-out Cylinder; Rebounding Lock; Provided with Front Cylinder Lock.

32 Caliber; 6 Shots; Rubber Handle, shoots 32 WCF Cartridges

Nickel Plated	Each
No. 324SM —4 inch Barrel; Weight 31 ozs.	**$30.00**
No. 325SM —5 inch Barrel; Weight 32 ozs.	**30.00**
No. 326½SM—6½ inch Barrel; Weight 33 ozs.	**30.00**

Blued	
No. 2324SM —4 inch Barrel; Weight 31 ozs	**$30.00**
No. 2325SM —5 inch Barrel; Weight 32 ozs	**30.00**
No 2326½SM -6½ inch Barrel; Weight 33 ozs.	**30.00**
Special Target Sights, Extra	**3.00**

38 Caliber; 6 Shots; Rubber Handle; Shoots 38 S&W Special or 38 Long Colt U.S. Service Cartridges.

Nickel Plated	Each
No. 384SM —4 inch Barrel; Weight 29 ozs.	**$30.00**
No. 385SM —5 inch Barrel; Weight 30 ozs.	**30.00**
No. 386½SM—6½ inch Barrel; Weight 31 ozs.	**30.00**

Blued	
No. 2384SM —4 inch Barrel; Weight 29 ozs.	**$30.00**
No. 2385SM —5 inch Barrel; Weight 30 ozs.	**30.00**
No. 2386½SM 6½ inch Barrel; Weight 31 ozs.	**30.00**
	3.00

One in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

COLT REVOLVERS

DOUBLE ACTION—SIMULTANEOUS HAND EJECTING

NOTE.—Our Stock of Colt Revolvers Comprises All the Best Selling Styles. Any Other Style, Caliber or Finish Made by the Colt's Patent Fire Arms Mfg. Co., which We Do Not Illustrate, We Can Furnish Promptly by Shipping Direct From Factory.

POCKET POSITIVE

Jointless Solid Frame; Swing-out Cylinder; Rubber Handle; Positive Lock.

32 Caliber; 6 Shots; Shoots 32 Short or Long Colt CF Cartridges.

✣ Can be Furnished Direct from Factory to Use 32 S&W Short and Long Cartridges, or 32 Colt Police Positive, Full and Gallery Loads.

Nickel Plated

Each

No. 3223½P—2½ inch Barrel; Weight 16 ozs... $22 00
No. 3233½P—3½ inch Barrel; Weight 16½ ozs. 22 00
No. 3236P —6 inch Barrel; Weight 18 ozs..... 22 00

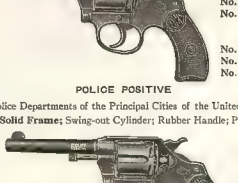
Blued

No. 2322½P—2½ inch Barrel; Weight 16 ozs.. 22 00
No. 2323½P—3½ inch Barrel; Weight 16½ ozs. 22 00
No. 2326P —6 inch Barrel; Weight 18 ozs..... 22 00

POLICE POSITIVE

Adopted by the Police Departments of the Principal Cities of the United States and Canada

Jointless Solid Frame; Swing-out Cylinder; Rubber Handle; Positive Lock



32 Caliber; 6 Shots; Shoots 32 Short or Long Colt CF Cartridges.

Nickel Plated

Each

No. 324CP—4 inch Barrel; Weight 18 ozs.. .... $24.00

Blued

No. 2324CP—4 inch Barrel; Weight 18 ozs.. .... 24 00
No. 2326CP—6 inch Barrel; Weight 19 ozs 24 00

38 Caliber; 6 Shots; Shoots 38 Colt Police Positive and 38 S&W Cartridges.

Nickel Plated

Each

No. 384PP—4 inch Barrel; Weight 20 ozs.. ..... $24 00
No. 386PP—6 inch Barrel; Weight 21½ ozs.. ..... 24 00

Blued

No. 2384PP—4 inch Barrel; Weight 20 ozs.. ..... 24 00
No. 2386PP—6 inch Barrel; Weight 21½ ozs..... 24 00

32 Caliber; 6 Shots; Shoots 32 Colt Police Positive Full and Gallery Loads, or 32 S&W Short and Long Cartridges

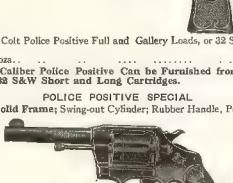
Each

No. S3234CP—4 inch Barrel; **Blued;** Weight 18 ozs.. .. .. $24 00

✣ Any Other Length or Finish of 32 Caliber Police Positive Can be Furnished from the Factory, Chambered to Take 32 Colt Police Positive Full and Gallery Loads, or 32 S&W Short and Long Cartridges.

POLICE POSITIVE SPECIAL

Jointless Solid Frame; Swing-out Cylinder; Rubber Handle, Positive Lock



32 Caliber; 6 Shots; Shoots 32/20 WCF Rifle Cartridges.

Blued

Each

No. 3324PS—4 inch Barrel; Weight 22 ozs..... $24.00
No. 3326PS—6 inch Barrel; Weight 24 ozs... ..... 24 00

38 Caliber; 6 Shots; Shoots 38 Short or Long Colt, 38 Colt Special and 38 S&W Special Full or Mid-range Loads.

Blued

Each

No. 3384PS—4 inch Barrel; Weight 20 ozs.. ..... $24 00
No. 3386PS—6 inch Barrel; Weight 21 ozs..... 24 00

POLICE POSITIVE TARGET

Jointless Solid Frame; Swing-out Cylinder; Rubber Handle; Positive Lock; Black Rear Sight, Adjustable for Windage; Removable Front Sight with Blade Fastened by Screw.

32 Caliber; 6 Shots; Shoots 32 Short or Long Colt CF Cartridges

Blued Each

✣ No. 3226CPT—6 inch Barrel; Entire Length 10½ inches; Weight 19 ozs..... $26 00

✣ Can also be Furnished from the Factory, Chambered to Take 32 Colt Police Positive Full and Gallery Loads, and 32 S&W Short and Long Cartridges.

OFFICERS' MODEL TARGET

Jointless Solid Frame; Swing-out Cylinder; Checked Walnut Target Handle; Hand Finished Action; Guard Strap and Trigger Finely Checked; Front Sight Adjustable for Elevation; Rear Sight with Adjusting Screw; Adjustable for Windage; Positive Lock.

38 Caliber; 6 Shots; Shoots 38 Long Colt, 38 Colt Special, also 38 S&W Special, Full and Mid-range Loads.

Blued Each

No. 2388OT -6 inch Barrel; Entire Length 11¾ inches; Weight 33½ ozs..... $32.00

No. 2387½OT—7½ inch Barrel; Entire Length 12¾ inches; Weight 35 ozs..... 32.00

One in a Box

NOTE.—All "Positive" Revolvers are Equipped with a Positive Lock, which is Arranged Between the Face of the Hammer and the Frame, Operating Automatically Only when the Trigger is Pulled, and at All Other Times Preventing the Firing-Pin from Coming in Contact with the Cartridge, Thereby Insuring Against Accidental Discharge.

✣ Not Carried in Stock. Can Only be Furnished by Shipping Direct from Factory

LAMPS

LIBRARY HANGING

LENGTH—Closed, 41 Inches; Extended, 78 Inches.
BURNER—No. 2, with 1-inch Wick.
CHIMNEY—No. 2, Sun.
EXTENSION—Automatic Spring
METAL PARTS—Solid Bronze, Rich Gilt Finish.
DOME—14-inch, Dark Green Tint with Large Red Chrysanthemum Decoration
PRISMS—28 Cut Glass.
FOUNT—Decorated to Match Dome.

Each

No. 9081—Complete with Chimney and Wick **$12.00**

One in a Barrel. Shipping Weight, 35 Pounds.

LENGTH—Closed, 36 Inches; Extended, 73 Inches.
BURNER—No. 2, with 1-inch Wick.
CHIMNEY—No. 2, Sun.
EXTENSION—Automatic Spring.
METAL PARTS—Solid Bronze, Highly Polished.
DOME—14-inch, with Large Pink Tiger Lily on Pink Background.
FRINGE—Imported Pink Bead, 5 Inches Wide.
FOUNT - Decorated to Match Dome.

Each

No. 9076—Complete with Chimney and Wick. **$12.00**

One in a Barrel. Shipping Weight, 35 Pounds.

No Additional Charge for Packing.

LAMPS

LIBRARY HANGING

LENGTH—Closed, 39 Inches; Extended, 76 Inches.
BURNER—Success, Center Draught, 100 Candle Power.
CHIMNEY—Success, 10-inch.
WICK—Round.
EXTENSION—Automatic Spring.
METAL PARTS—Solid Brass, with Permanent Oxidized Finish, Which Does Not Show Spots.
DOME—14-inch, Opal, Mosaic Decoration, with Band of Fruit, and Cylinder to Match
FRINGE—Imported Gold Bead.
FOUNT—Success, Center Draught, Container Decorated to Match Dome.

Each

No. 10022—Complete with Chimney and Wick $17.50

LENGTH—Closed, 32 Inches; Extended, 70 Inches.
BURNER—Success, Center Draught, 100 Candle Power.
CHIMNEY—Success, 10-inch
WICK—Round.
EXTENSION—Automatic Spring.
METAL PARTS—Solid Brass, Finished in Brushed Brass.
DOME—14 Inches, Square, with Top and Side Panels High Color Green Art Glass.
FRINGE—5 inch, Imported Green Bead.
FOUNT—Success, Center Draught.

Each

No. 10030—Complete with Chimney and Wick..... $26.50

One in a Barrel. Shipping Weight, 50 Pounds.

No Additional Charge for Packing.

LAMPS

LIBRARY HANGING

LENGTH—Closed, 28 Inches; Extended, 65 Inches.
BURNER—No. 2, with 1-inch Wick.
CHIMNEY—No. 2, Sun.
EXTENSION—Automatic Spring.
METAL PARTS—Solid Bronze, Rich Gilt Finish.
DOME—14-inch, Red Chrysanthemum Decoration, Ruby Background.
FOUNT—Decorated to Match Dome.

Each

No. 9057—Complete with Chimney and Wick.. .... **$17.50**

Two in a Barrel. Shipping Weight, 45 Pounds.

Sold Only as Packed; no Barrels Broken.

LENGTH—Closed, 30 Inches; Extended, 67 Inches.
BURNER—Success, Center Draught, 100 Candle Power.
CHIMNEY Success, 10-inch.
WICK—Round.
EXTENSION—Automatic Spring.
METAL PARTS—Solid Bronze, Rich Gilt Finish.
DOME—14-inch, Ruby Tint, with Large Bunch of Lilacs in Rich Colors.
FOUNT—Success—Center Draught, Container Decorated to Match Dome.

Each

No. 9037 Complete with Chimney and Wick **$11.00**

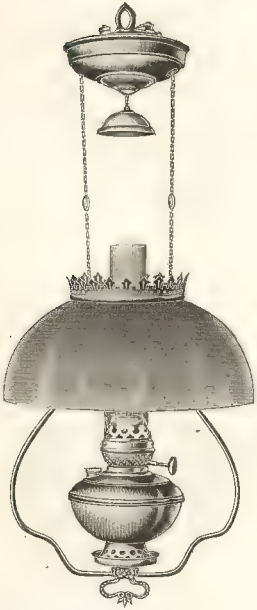
One in a Barrel. Shipping Weight, 35 Pounds.

No Additional Charge for Packing.

"DIAMOND EDGE IS A QUALITY PLEDGE"

LAMPS

LIBRARY HANGING



LENGTH—Closed, 28 Inches; Extended, 65 Inches.
BURNER—Success, Center Draught.
CHIMNEY—Success, 10-inch.
EXTENSION—Automatic Spring.
METAL PARTS—Very Heavy Brass.
DOME—14-inch, Plain.
FOUNT—Plain Polished Brass.

	Each
No. 9015 —Opal Dome, Complete with Chimney and Wick	$ 9.60
No. 9015G—Dome, Green Outside, White Inside; Complete with Chimney and Wick	12.60

One in a Box. Shipping Weight, 45 Pounds.

LENGTH—Closed, 44 Inches; Extended, 59 Inches.
BURNER—No. 2, with 1-inch Wick.
CHIMNEY—No. 2, Sun.
EXTENSION—Patent Weight.
METAL PARTS—Solid Bronze, Rich Gilt Finish.
DOME—14-inch, Opal, with Lilac Decoration.
FOUNT—Crystal Glass, with Outside Filler.

	Each
No. 9000—Complete with Chimney and Wick	$8.50

Two in a Barrel. Shipping Weight, 50 Pounds.

Sold Only as Packed; no Barrels Broken.

No Additional Charge for Packing.

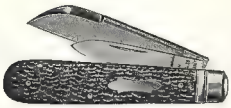
POCKET KNIVES

★G. W. PUTNAM & CO., GERMANY

Imported; Good Quality German Cast Steel; Well Ground, and Nicely Finished; Made for Service. NOT GUARANTEED

TWO BLADE JACKS

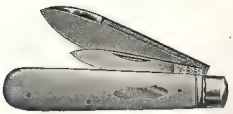
Cuts Three Quarter Size



Regular Jack Pattern; Length 3½ inches; Polished Steel Rat Tail Beaded Bolster; One Large Sheep Foot and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. P2100STSF—Patent Stag Handle. $5.00



Regular Jack Pattern; Length 3½ inches; Polished Steel Beaded Bolster; One Large Spear and One Small Pen Blade, Glazed; Iron Lining, German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. P2100RS —Cocobolo Handle. $5.00
No. P2100ES —Ebony Handle. 5.00
No. P2100WS White Bone Handle. 5.00
No. P2100STS—Patent Stag Handle. 5.00

Regular Jack Pattern; Length 3½ inches; Polished Steel Beaded Bolster; One Large Clip and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield; Weight per Dozen 1⅝ lbs.

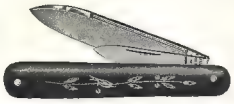
Per Dozen

No. P2100RC —Cocobolo Handle. . . . $5.00
No. P2100EC —Ebony Handle. 5.00
No. P2100STC—Patent Stag Handle . . 5.00

Sleeve Board Pattern; Length 3 inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Iron Lined; Weight Per Dozen 16 ozs.

Per Dozen

No. P2130B —Horn Handle, German Silver Shield $5.00
No. P2130ST—Patent Stag Handle, German Silver Shield 5.00
No. P2130IN—Horn Handle, German Silver, Pearl and Brass Inlaid Branch Design 5.00



Sleeve Board Pattern; Length 3½ inches; Uncapped; One Large Spear and One Small Pen Blade; Glazed; Iron Lined; Weight per Dozen 1½ lbs.

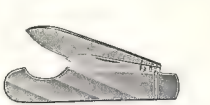
Per Dozen

No. P2128IN—Horn Handle, German Silver and Brass Inlaid Bird and Branch Design. . . . . $ 5.00
No. P2128ST—Patent Stag Handle, German Silver Shield. 10.00

Sway Back Pattern; Length 2⅞ inches; Uncapped; One Large Sheep Foot and One Small Pen Blade; Full Polished; Iron Lined; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. P2179N—Iron Handle, Nickel Plated and Polished. $5.00



Easy Opener; Length 2¾ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Iron Lined; No Shield; Weight per Dozen 14 ozs.

Per Dozen

No. P2129N—Iron Handle, Nickel Plated and Polished. . **$5.00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

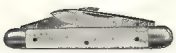
POCKET KNIVES

★ G. W. PUTNAM & CO., GERMANY

Imported; Good Quality German Cast Steel; Well Ground and Nicely Finished; Made for Service. NOT GUARANTEED

TWO BLADE PENS

Cuts Three Quarter Size

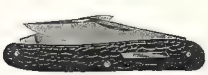


Sleeve Board Pattern; Length 2⅝ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. P2182P—Pearl Handle **$10 00**

Congress Pattern; Length 2⅝ inches; German Silver Bolsters, One Large Congress and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. P2183P -Pearl Handle **$10 00**



Wharncliffe Pattern; Length 3⅛ inches; Uncapped; One Large Clip and One Small Pen Blade; Full Polished; Iron Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen
No. P2132ST—Patent Stag Handle . . **$5 00**

Serpentine Pattern, Length 3½ inches; Uncapped; One Large Clip and One Small Pen Blade, Full Polished, Iron Lining; German Silver Shield, Weight per Dozen 12 ozs.

Per Dozen
No. P2133B —Horn Handle **$5 00**
No. P2133ST Patent Stag Handle. . . . **5 00**

Sleeve Board Pattern; Length 3⅜ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, No Sneld; Weight per Dozen 14 ozs.

Per Dozen
No. P2134B —Horn Handle **$5 00**
No. P2134ST Patent Stag Handle. . . **5 00**

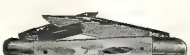
THREE BLADE PENS

Sleeve Board Pattern; Length 2½ inches, Brass Tipped; One Large Spear, One Small Pen and One File Blade, Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. P3133P—Pearl Handle. **$12 00**

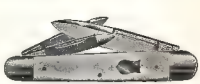
Sleeve Board Pattern; Length 2⅛ inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. P3134P—Pearl Handle. **$12 00**



Wharncliffe Pattern; Length 2⅛ inches; German Silver Bolsters; One Large Clip, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 10 ozs.

Per Dozen
No. P3117P—Pearl Handle. **$14 00**

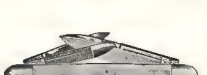


Sleeve Board Pattern; Length 3 inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished, Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen
No. P3116P—Pearl Handle. **$15 00**

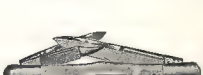
Balloon Pattern; Length 3⅛ inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen
No. P3113P—Pearl Handle. **$15 00**



Senator Pattern; Length 3 inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen
No. P3114P—Pearl Handle. **$15.00**



Balloon Pattern, Length 3⅛ inches; German Silver Bolsters, One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs

Per Dozen
No P3118P—Pearl Handle. **$15 00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

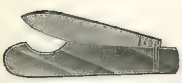
POCKET KNIVES

★G. W. PUTNAM & CO., GERMANY

Imported; Good Quality German Cast Steel; Well Ground, and Nicely Finished; Made for Service. NOT GUARANTEED

ONE BLADE JACKS

Cuts Three Quarter Size



Easy Opener; Length 2¾ inches, Uncapped; One Large Spear Blade, Full Polished; Unlined; No Shield; Weight per Dozen 20 ozs.

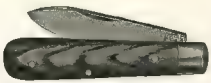
Per Dozen

No. P1104N—**Iron** Handle, Nickel Plated and Polished..... **$2.50**

Regular Jack Pattern; Length 3¼ inches; Uncapped; One Large Spear Blade, Glazed; Unlined; No Shields; Fancy Embossed Covers with Bull Fight Design; Weight per Dozen 1¾ lbs.

Per Dozen

No. P1105—**Iron** Handle, Bright Finish **$2.10**



Regular Jack Pattern; Length 3¼ inches; Polished Steel Flush Bolster; One Large Spear Blade, Glazed; Iron Lining; No Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. P1100—**Cocobolo** Handle.....**$2.50**

Half Dozen in a Box

ONE AND TWO BLADE BARLOWS

Young America Assortment; Length 3½ inches; Polished Steel Bolster; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; Weight per Dozen 1⅞ lbs.

Per Dozen

No. YA—**Assorted Red, White and Blue** Composition Handles; Assorted Four Red, Four White and Four Blue in a Cardboard Box **$5.00**

English Barlow; Length 3 inches; Filed Cast Iron Bolster; One Large Spear Blade, Glazed; Iron Lining; Weight per Dozen 1⅝ lbs.

Per Dozen

No. K1502—**Brown Bone** Handle.....**$1.50**

English Barlow; Length 3⅛ inches; Filed Cast Iron Bolster; One Large Spear Blade, Glazed; Iron Lining; Weight per Dozen 1⅝ lbs.

Per Dozen

No. T3—**Brown Bone** Handle..... **$1.00**

Three Dozen in a Package

XLNT Barlow; Length 4¼ inches; **Brown Painted Imitation Stag Iron Handle**; Polished Steel Bolster; Iron Lining; Glazed Blades; Weight per Dozen 2½ lbs.

Per Dozen

No. F108C—Large **Clip** Blade.....**$4.00**

One Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

*G. W. PUTNAM & CO., GERMANY

Imported; Good Quality German Cast Steel; Well Ground, and Nicely Finished; Made for Service. NOT GUARANTEED

STOCK AND CATTLE

Cuts Three Quarter Size

Premium Stock Pattern; Length 3¼ inches; German Silver Bolsters; One Large Clip, One Small Sheep Foot and One Small Spaying Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 20 ozs.

Per Dozen

No. P3138B —Horn Handle **$10.00**
No. P3138ST—Patent Stag Handle **10.00**

Cattle Knife; Length 3¼ inches; German Silver Bolsters; One Large Spear, One Small Sheep Foot and One Small Spaying Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 22 ozs.

Per Dozen

No. P3137B —Horn Handle. **$10.00**
No. P3137ST Patent Stag Handle. **10.00**

Anglo-Saxon Pattern, Cattle Knife; Length 3⅝ inches; German Silver Bolsters; One Large Spear, One Small Sheep Foot and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

No. P3103ST—Patent Stag Handle. **$11.00**

Premium Stock Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip, One Small Sheep Foot and One Small Spaying Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. P3102P—Pearl Handle. **$27.00**

Premium Stock Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip, One Small Sheep Foot and One Small Spaying Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. P3140B —Horn Handle. **$11.50**
No. P3140ST—Patent Stag Handle. **10.00**

Texas Jack Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip and One Large Spear Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen

No. P2151B —Horn Handle **$11.00**
No. P2151ST Patent Stag Handle. **11.00**

Texas Jack Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip and One Large Spear Blade; Glazed and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen

No. P2110ST—Patent Stag Handle. **$10.00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

*G. W. PUTNAM & CO., GERMANY

Imported; Good Quality German Cast Steel; Well Ground and Nicely Finished; Made for Service. NOT GUARANTEED

FOUR BLADE PENS

Cuts Three Quarter Size

Senator Pattern; Length 2½ inches; German Silver Capped; One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 8 ozs.

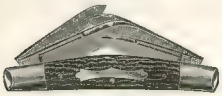
Per Dozen

No. P4147P—Pearl Handle.....$11.00

Senator Pattern; Length 2½ inches; Uncapped; One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. P4135P—Pearl Handle.....$14.00



Congress Pattern; Length 3½ inches; German Silver Bolsters; Two Large Congress and Two Small Pen Blades; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

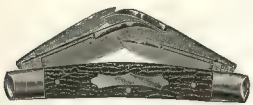
Per Dozen

No. P4104ST—Patent Stag Handle.....$10.00

Congress Pattern; Length 3¾ inches; German Silver Rat Tail Bolsters; Two Large Congress and Two Small Pen Blades; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

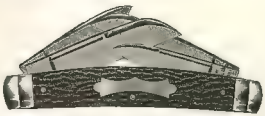
No. P4102ST—Patent Stag Handle.....$10.50



Congress Pattern; Length 4 inches; German Silver Bolsters; Two Large Congress and Two Small Pen Blades; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. P4103ST—Patent Stag Handle.....$11.00

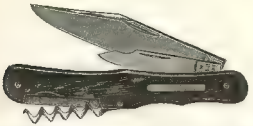


Congress Pattern; Length 4⅛ inches; Polished Steel Rat Tail Bolsters; Two Large Congress and Two Small Pen Blades, Glazed; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

No. P4100ST—Patent Stag Handle.....$15.00

COMBINATION



Length 3⅞ inches; Uncapped; One Large Clip, One Small Pen and One Corkscrew; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 1⅞ lbs.

Per Dozen

No. P3141B —Horn Handle.....$11.00
No. P3141ST—Patent Stag Handle.....11.00

Length 3½ inches; Uncapped; One Large Congress and One Small Pen Blade; One Wire Cutter and one Cork Screw; Hole through Covers to cut off Cigar Ends when large Blade is pressed down. Glazed Blades; Brass Lining; No Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. P4137N—Iron Handle; Nickel Plated and Polished.....$10.00

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

*G. W. PUTNAM & CO., GERMANY

Imported; Good Quality German Cast Steel; Well Ground, and Nicely Finished; Made for Service. NOT GUARANTEED

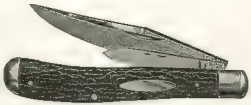
TWO BLADE JACKS

Cuts Three Quarter Size

Physician's Pattern; Length 3¾ inches; German Silver Rat Tail Bolster and Seal Cap; One Large Spear and One Small Pen Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 18 ozs.

Per Dozen

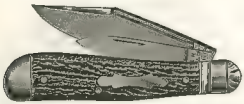
No. P2112B —Horn Handle.....$10.00
No. P2112ST —Patent Stag Handle.....10.00
No. P2112P —Pearl Handle.....20.00



Serpentine Jack Pattern; Length 3¾ inches; German Silver Bolster and Cap; One Large Clip and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 3¾ lbs.

Per Dozen

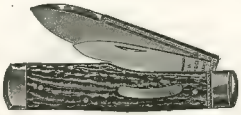
No. P2124ST—Patent Stag Handle.....$10.00



Crown Jack Pattern; Length 3¾ inches; German Silver Bolster and Cap; One Large Clip and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

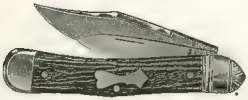
No. P2139ST -Patent Stag Handle.....$10.00



Gun Stock Pattern; Length 3¾ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

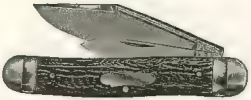
No. P2138ST—Patent Stag Handle.....$10.00



Crown Jack Pattern; Length 3¾ inches; German Silver Bolster and Cap; One Large Clip and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen

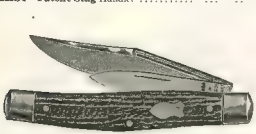
No. P2140ST—Patent Stag Handle.....$10.00



Serpentine Pattern; Length 3¾ inches, German Silver Rat Tail Bolster and Cap; One Large Clip and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

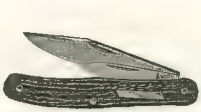
No. P2137ST—Patent Stag Handle.....$10.00



Premium Stock Pattern; Length 3¾ inches; German Silver Bolster and Cap; One Large Clip and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 2¾ lbs.

Per Dozen

No. P2148ST -Patent Stag Handle.....$10.00



Length 3 inches; Uncapped; One Large Clip and One Small Pen Blade; Full Polished; Iron Lined; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen

No. P2126½ —Horn Handle.....$5.00
No. P2126ST—Patent Stag Handle.....5.00

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

CLOTHES WRINGERS

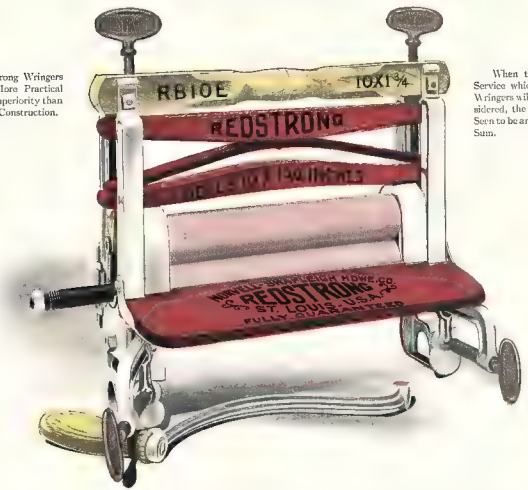
★REDSTRONG

Unconditionally Guaranteed

Made to Our Own Exclusive Specifications

Redstrong Wringers Do Not Admit of Comparison They Set the Mark of Perfection

Redstrong Wringers Embody More Practical Points of Superiority than any Other Construction.



When the Unlimited Service which Redstrong Wringers will give is Considered, the First Cost is Seen to be an Insignificant Sum.

★REDSTRONG, HIGH FRAME

The Strongest, Longest Lived, Handsomest, Most Serviceable Wringer Ever Built; We Guarantee the Fine Red Rubber Rolls Without Restriction.

Can be Fastened on any Style of Wood or Metal Tub, Either Round or Square; the Improved Guide Board Spreads the Clothes Evenly the Entire Length of Rolls

Distinctive Features—The Frame of the Redstrong Wringer is **Galvanized Malleable Iron**, so Constructed that it will Never Break, Warp, Spring nor Rust, thus Overcoming Troubles Experienced in Ordinary Wringers.

The Adjusting Screws and Clamp Screws are **Solid Bronze**, Non-rusting and Require No Oil; They Cannot "Lock" under any Conditions, and no Matter how Long a Redstrong Wringer Stands Unused, the Screws May be Easily Turned with the Fingers. The Wood Spring and Spring Bar are Made of Hard Maple, Handsomely Finished in Vermilion and Lettered in Black, Giving a Most Striking Appearance.

The Gearing is Enclosed in Metal Casings Leaving no Possible Chance of Accidentally Catching Fingers or Clothes. The Rolls are Made of Fine Red Rubber, and Combine Quality and Endurance.

Red Rubber is Believed by Many to be the Highest Quality of Para Rubber. Our Unconditional Guarantee on Redstrong Wringer Rolls is Evidence that we Believe them to be the Best that can be Produced. They will Stand any Reasonable Usage.

The Pressure Spring is Flat Steel, Elliptical in Shape, Perfectly Tempered.

BALL BEARINGS; ENCLOSED GEARS

	Per Dozen
No. RB10E—Rolls 10x1¾ inches; Weight per Dozen 252 lbs. .	**$ 99.00**
No. RB11E—Rolls 11x1¾ inches; Weight per Dozen 256 lbs....	**110.00**

Quarter Dozen in a Case

REGULAR BEARINGS; ENCLOSED GEARS

	Per Dozen
No. R10E—Rolls 10x1¾ inches; Weight per Dozen 232 lbs.... .	**$93.00**
No. R11E—Rolls 11x1¾ inches; Weight per Dozen 236 lbs.... .	**99.00**

Quarter Dozen in a Case

ADVANTAGES OF HANDLING REDSTRONG WRINGERS

First of all, it is "Something Different," "Something Distinctive," and being Unconditionally Guaranteed, it will Prove a Perpetual Advertisement of Quality for any Store; Another Feature, Perhaps the Most Important of all, is the Opportunity for Larger Profits; There is no Competition, as Redstrong Wringers are Sold Only to the Best Trade and Cannot be Secured Except by Legitimate Dealers.

"DIAMOND EDGE IS A QUALITY PLEDGE"

CLOTHES WRINGERS

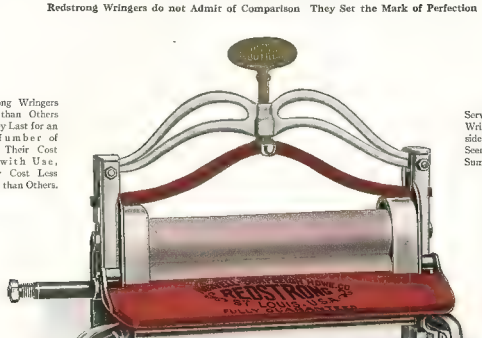
★REDSTRONG

Unconditionally Guaranteed

Made to Our Own Exclusive Specifications

Redstrong Wringers do not Admit of Comparison They Set the Mark of Perfection

Redstrong Wringers Cost Less than Others Because They Last for an Indefinite Number of Years and Their Cost Diminishes with Use, Hence They Cost Less per Washing than Others.



When the Unlimited Service which Redstrong Wringers will Give is Considered, the First Cost is Seen to be an Insignificant Sum.

★REDSTRONG, LOW FRAME

We Guarantee the Fine Red Rubber Rolls, without Restriction

Built on the Same Excellent Lines as Our Redstrong High Frame Wringer Shown on the Preceding Page, the Only Difference being the Low Frame and Single Adjusting Screw; Designed for Users who Want Only the Best.

Can be Fastened on any Style of Wood or Metal Tub, either Round or Square, the Improved Guide Board Spreads the Clothes Evenly the Entire Length of Rolls.

Distinctive Features The Frame of the Redstrong Wringer is Malleable Iron, so Constructed that it will Never Break, Warp, Spring nor Rust, thus Overcoming Troubles Experienced in Ordinary Wringers; all Metal Parts are Heavily Galvanized and are Non-rusting.

The Adjusting Screws and Clamp Screws are **Solid Bronze,** Non-rusting, and Require No Oil; they cannot "Lock" under any Conditions; the Wringer Board is Made of Hard Maple, Handsomely Finished in Vermilion and Lettered in Black, Giving a Most Striking Appearance.

The Gearing is Enclosed in Metal Casings, Leaving No Possible Chance of Accidentally Catching Fingers or Clothes.

The Rolls are Made of **Fine Red Rubber,** and Combine Quality and Endurance; they will Stand any Reasonable Usage; the Pressure Spring is Flat Steel of Improved Shape, Perfectly Tempered and Finished in Vermilion.

BALL BEARINGS; ENCLOSED GEARS

	Per Dozen
No. RB30E—10x1¾ inch Rolls; Weight per Dozen 242 lbs . .	**$ 97 00**
No. RB31E—11x1¾ inch Rolls; Weight per Dozen 246 lbs.....	**108 00**

Quarter Dozen in a Case

REGULAR BEARINGS; ENCLOSED GEARS

	Per Dozen
No. R30E—10x1¾ inch Rolls; Weight per Dozen 242 lbs...	**$90.00**
No. R31E—11x1¾ inch Rolls; Weight per Dozen 246 lbs..... ..	**97.00**

Quarter Dozen in a Case

REDSTRONG SELLING POINTS

Unbreakable Frame; Long Lasting Rolls; therefore, Most Economical.

Special Construction and Finish—Attracts Instant Attention and Commends Itself at once to the Customer who wants the Best that Money can Buy. **Solid Bronze** Adjusting Screw and Clamp Screws, will Never Cause Trouble by Becoming "Locked," a Fault Often Experienced with Ordinary Makes.

Enclosed Gears—Covered by a Metal Casing, Fully Protecting both the Clothes and the User from Accident.

FOLDING BENCH CLOTHES WRINGERS

Bench will Hold Two Tubs or One Tub and a Clothes Basket; One or Both Benches can be Used at the Same Time; with Reversible Drip Board to Carry the Water to Either Bench; Has Braced Steel Legs

✣ ROYAL BENCH

Rolls Warranted for 5 Years

High Grade White Rubber Rolls; Varnished Maple Frame, with Blue Enameled Cross Bars; Flat Steel Elliptical Pressure Spring, Galvanized Malleable Iron Gears, Clamps and Screws.

Length of Frame Over All 48 Inches, Height 36 Inches.

Regular Bearings

	Gears	Rolls	Width of Frame	Weight per Dozen	Per Dozen
✣ No. BR500	—Exposed	10x1⅝ inches	12 inches	458 lbs.	$109 00
✣ No. BR501	Exposed	11x1⅝ inches	13 inches	464 lbs.	118 00
✣ No. BR502	Exposed	12x1⅝ inches	14 inches	470 lbs.	127 00
✣ No. BR500E	Enclosed	10x1⅝ inches	12 inches	468 lbs.	113 00
✣ No. BR501E	Enclosed	11x1⅝ inches	13 inches	480 lbs.	121 00
✣ No. BR502L	—Enclosed	12x1⅝ inches	14 inches	493 lbs.	130 00

Two Each Dozen in a Crate

NOVELTY BENCH

Rolls Warranted for 3 Years

High Grade White Rubber Rolls; Varnished Maple Frame, with Blue Enameled Cross Bars; Flat Steel Elliptical Pressure Spring, Galvanized Malleable Iron Gears, Clamps and Screws.

Length of Frame Over All 48 inches, Height 40 inches.

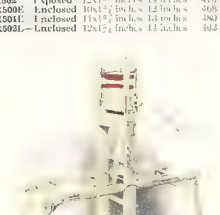
Regular Bearings

	Gears	Rolls	Width of Frame	Weight per Dozen	Per Dozen
No. BN300	Exposed	10x1¾ inches	12 inches	1	$ 97 00
No. BN301	—Exposed	1.x1¾ inches	13 inches	464 lbs.	105 00

Ball Bearings

✣ No. BN390E	Enclosed	10x1¾ inches	12 inches	468 lbs.	108 00
✣ No. BN391E	—Enclosed	11x1¾ inches	13 inches	480 lbs.	116 00

Two Each Dozen in a Crate



✣TIP TOP BENCH

Rolls Warranted for 1 Year

Good Grade White Rubber Rolls, Varnished Maple Frame, with Red Enameled Reverse Bars; Flat Steel Elliptical Pressure Spring; Galvanized Malleable Iron Gears, Clamps and Screws

Length of Frame Over All 44 inches; Height 48 Inches.

Regular Bearings; Exposed Gears

	Rolls	Width of Frame	Weight per Dozen	Per Dozen
No. BT410	10x1⅝ inches	12 inches	456 lbs.	$87 00
No. BT411	11x1⅝ inches	12 inches	464 lbs.	94 00

Two Each Dozen in a Crate

✣ HOUSEHOLD BENCH

Rolls Warranted for 1 Year

Good Grade White Rubber Rolls; Varnished Maple Frame; Flat Steel Elliptical Pressure Spring; Galvanized Malleable Iron Gears, Clamps and Screws.

Length of Frame Over All 44 Inches; Height 48 inches.

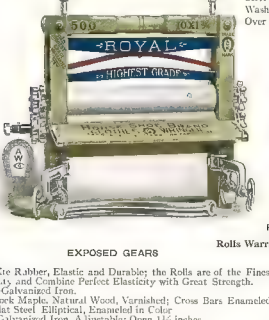
Regular Bearings; Exposed Gears

	Rolls	Width of Frame	Weight per Dozen	Per Dozen
✣ No. BH150	—10x1⅝ inches	12 inches	456 lbs.	$87 00
✣ No. BH151	—11x1⅝ inches	13 inches	464 lbs.	94 00

Two Each Dozen in a Crate

✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

CLOTHES WRINGERS



For Wood, Galvanized Steel and Stone Tubs and Washing Machines, not Over 1½ inches Thick.

ROYAL

Rolls Warranted for 5 Years

EXPOSED GEARS

Rolls—White Rubber, Elastic and Durable; the Rolls are of the Finest Quality, and Combine Perfect Elasticity with Great Strength.
Castings—Galvanized Iron.
Frame—Rock Maple, Natural Wood, Varnished; Cross Bars Enameled.
Spring—Flat Steel, Elliptical, Enameled in Color.
Clamps—Galvanized Iron, Adjustable; Open 1½ inches.

		Rolls	Weight Per Dozen	Per Dozen
No. R500—Regular Bearings	1¾x1¼	inches	240 lbs.	**$83 00**
No. R501 Regular Bearings	11x1¾	inches	258 lbs.	**92 00**
No. R502—Regular Bearings	12x1¾	inches	274 lbs.	**100.00**
No. R500—Ball Bearings	10x1¾	inches	260 lbs.	**91.00**
No. R501—Ball Bearings	11x1¾	inches	268 lbs	**99 00**
✣ **No. R502—Ball Bearings**	12x1¾	inches	280 lbs.	**108 00**

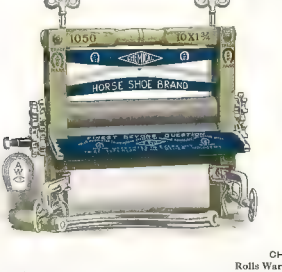
ENCLOSED GEARS

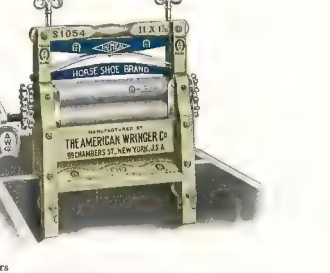
Gears Enclosed and Protected by Galvanized Steel Shields
Rolls—White Rubber, Elastic and Durable; the Rolls are of the Finest Quality and Combine Perfect Elasticity with Great Strength.
Castings—Galvanized Iron.
Frame—Rock Maple, Natural Wood, Varnished, Cross Bars Enameled.
Spring—Flat Steel, Elliptical; Enameled in Color.
Clamps—Galvanized Iron, Adjustable; Open 1½ inches.

		Rolls	Weight Per Dozen	Per Dozen
No. R500E Regular Bearings	10x1¾	inches	252 lbs.	**86 00**
No. R501E Regular Bearings	11x1¾	inches	264 lbs.	**95 00**
No. R500E—Ball Bearings	10x1¾	inches	272 lbs.	**94 00**
No. R501E—Ball Bearings	11x1¾	inches	280 lbs.	**103 00**

Enclosed Gears Insure Against Accidental Injury to the Hand of the Operator.

Quarter Dozen in a Case





CHEMICAL

Rolls Warranted for 5 Years

With Ordinary Care will last Ten Years; Material is Especially Selected and Finished; Rolls not Affected by Chemicals in Soap and Compounds.
Rolls—Dark Rubber; Finest Grade.
Frame—Rock Maple, Natural Wood, Varnished; Enameled Spring Bars.
Spring—Flat Steel, Elliptical; Galvanized.
Gears—Exposed; Galvanized
Castings—Galvanized Iron.

For Round or Square Tubs, not over 1½ inches Thick

		Rolls	Weight per Dozen	Per Dozen
No. C1050 Regular Bearings	10x1¾	inches	240 lbs.	**$96 00**
No. C1051 Regular Bearings	11x1¾	inches	252 lbs.	**96 00**
✣ **No. C1052 Regular Bearings**	12x1¾	inches	264 lbs.	**114 00**
✣ **No. C1080—Ball Bearings**	10x1¾	inches	268 lbs.	**95 00**
✣ **No. C1081—Ball Bearings**	11x1¾	inches	276 lbs.	**113 00**
✣ **No. C1082—Ball Bearings**	12x1¾	inches	292 lbs	**121 00**

Rolls—Dark Rubber; Finest Grade.
Frame—Rock Maple, Natural Wood, Varnished, Enameled Spring Bars.
Spring—Flat Steel, Elliptical, Galvanized.
Gears—Exposed, Galvanized
Castings—Galvanized Iron

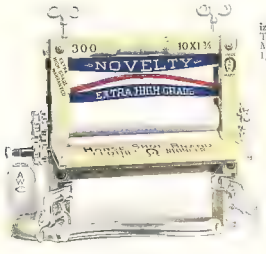
Only for Stationary Tubs, not over 2 inches Thick

		Rolls	Weight per Dozen	Per Dozen
✣ **No. CS1054—Regular Bearings**	11x1¾	inches	256 lbs.	**$135 00**
✣ **No. CS1055—Regular Bearings**	12x1¾	inches	272 lbs.	**147 00**
✣ **No. CS1058—Regular Bearings**	12x2	inches	320 lbs.	**168 00**
✣ **No. CS1084—Ball Bearings**	11x1¾	inches	276 lbs.	**142 00**
✣ **No. CS1085—Ball Bearings**	12x1¾	inches	292 lbs.	**154 00**
✣ **No. CS1088 Ball Bearings**	12x2	inches	340 lbs.	**175.00**

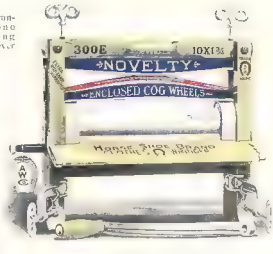
Quarter Dozen in a Case

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

CLOTHES WRINGERS



For Wood, Galvanized Steel or Stone Tubs and Washing Machines, not Over 1¼ inches Thick



NOVELTY

WITH EXPOSED GEARS

Rolls—White Rubber; Extra Quality. **Warranted for 3 Years.**
Frame—Rock Maple, Natural Wood, Varnished, Blue Enameled Spring Bar.
Spring—Flat Steel, Elliptic, Enameled Red.
Gears—Galvanized Malleable Iron.
Clamps—Galvanized Malleable Iron; Adjustable; Open 1¼ Inches.
Castings—Galvanized Iron.

	Rolls	Weight Per Dozen	Per Dozen
No. N300—Regular Bearings	10x1¾ inches	250 lbs.	$72 00
No. N301—Regular Bearings	11x1¾ inches	2 80 lbs.	79 00
✣ No. N302—Regular Bearings	12x1¾ inches	290 lbs.	86 00
No. N390—Ball Bearings	10x1¾ inches	260 lbs.	79 00
No. N391—Ball Bearings	11x1¾ inches	268 lbs.	86 00
✣ No. N392—Ball Bearings	12x1¾ inches	280 lbs.	94 00

WITH ENCLOSED GEARS

Gears Enclosed and Protected by Galvanized Steel Shield

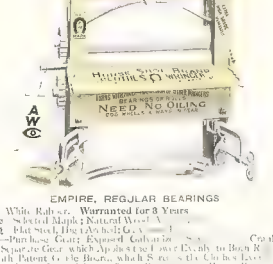
Rolls—White Rubber, Extra Quality. **Warranted for 3 Years.**
Frame—Rock Maple, Natural Wood Varnished, Blue Enameled Spring Bar.
Spring—Flat Steel, Elliptic, Enameled Red.
Gears—Galvanized Malleable Iron, Nickel Plated.
Clamps—Galvanized Malleable Iron; Adjustable; Open 1¼ inches.
Castings—Galvanized Iron.

	Rolls	Per Dozen	Weight Per Dozen
No. N300F—Regular Bearings	10x1¾ inches	2 Pairs	$74 00
✣ No. N301I—Regular Bearings	11x1¾ inches	2nd lbs.	82 00
No. N390L—Ball Bearings	10x1¾ inches	272 lbs.	82 00
✣ No. N391E—Ball Bearings	11x1¾ inches	280 lbs.	103.00

Enclosed Gears Insure Against Accidents. Injury to the Hands

Quarter Dozen in a Case

UNIVERSAL



EMPIRE, REGULAR BEARINGS

Rolls—White Rubber. **Warranted for 3 Years.**
Frame—Selected Maple; Natural Wood Varnished.
Spring—Flat Steel, Elliptic; Enameled Red.
Gears—Malleable Cast; Exposed Galvanized Steel Crank has Separate Gear which Applies Steel Gear Directly to Both Rolls. With Patent Gear Boxes, which Keep Gears in the Clothes Lever. The Crank Thread has a Brass Bushing; the Wood Bearings are Tallow Soaked and Require no Oiling; Adjustable Clamps Open 1¼ in.

For Wood, Galvanized Steel or Stone Tubs and Washing Machines, Not Over 1¼ inches Thick

	Rolls	Weight Per Dozen	Per Dozen
No. U350—Regular Bearings	10x1¾ inches	250 lbs.	$71 00
No. U351—Regular Bearings	11x1¾ inches	260 lbs.	78 00
No. U352—Regular Bearings	12x1¾ inches	908 lbs.	86 00
No. U380—Ball Bearings	10x1¾ inches	268 lbs.	78 00
No. U381—Ball Bearings	11x1¾ inches	276 lbs.	86 00
No. U382—Ball Bearings	12x1¾ inches	2[illegible] lbs.	94 00

Quarter Dozen in a Case

For Wood, Galvanized Steel or Stone Tubs and Washing Machines, Not Over 1¼ inches Thick

	Rolls	Weight Per Dozen	Per Dozen
No. E350	10x1¾ inches	Rolls, Weight per Dozen, 272 lbs.	$77 00
No. E351	11x1¾ inches	Rolls, Weight per Dozen, 288 lbs.	85 00
✣ No. E352	12x1¾ inches	Rolls, Weight per Dozen, 304 lbs.	93 00

For Hotel and Laundry Tubs, Not Over 2 inches Thick

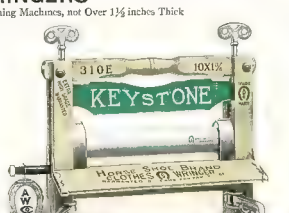
✣ No. F8	11x2¼ inch Rubber Rolls, Weight per Dozen [illegible]	240.00
✣ No. E8P	11x2¼ inch Rubber Rolls, Weight per Dozen, Boxed for Export, Weight per Dozen, 450 lbs.	253 00

Quarter Dozen in a Case

✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

CLOTHES WRINGERS

For Wood, Galvanized Steel or Stone Tubs and Washing Machines, not Over 1½ inches Thick



KEYSTONE

WITH EXPOSED GEARS

Rolls Warranted for 3 Years

Rolls—White Rubber; Good Grade
Frame—Varnished Natural Maple
Springs—Galvanized Spiral Steel Coil
Gears—Galvanized Malleable Iron; Double Cogs
Clamps—Galvanized Iron; Adjustable; Open 1½ inches
Castings—Galvanized Iron

	Rolls	Weight Per Dozen	Per Dozen
No. K310—Regular Bearings	10x1¾ inches	260 lbs.	**$71 00**
No. K311—Regular Bearings	11x1¾ inches	272 lbs.	**78 00**
† No. K312—Regular Bearings	12x1¾ inches	288 lbs.	**86 00**
† No. K317—Ball Bearings	10x1¾ inches	288 lbs.	**78 00**
† No. K318—Ball Bearings	11x1¾ inches	300 lbs.	**86 00**
† No. K319—Ball Bearings	12x1¾ inches	310 lbs.	**94 00**

Quarter Dozen in a Case

WITH ENCLOSED GEARS

Rolls Warranted for 3 Years

Rolls—White Rubber, Good Grade
Frame—Varnished Natural Maple
Springs—Galvanized Spiral Steel Coil
Gears—Galvanized Malleable Iron Double Cogs
Clamps—Galvanized Iron; Adjustable; Open 1½ inches
Castings—Galvanized Iron

	Rolls	Weight Per Dozen	Per Dozen
No. K310E—Regular Bearings	10x1¾ inches	284 lbs.	**$74 00**
No. K311E—Regular Bearings	11x1¾ inches	288 lbs.	**82 00**
No. K317E—Ball Bearings	10x1¾ inches	300 lbs.	**82 00**
No. K318E—Ball Bearing	11x1¾ inches	304 lbs.	**90 00**

Quarter Dozen in a Case

RIVAL

Rolls Warranted for 1 Year

Rolls—White Rubber
Frame—Selected Maple; Varnished, with Red Pressure Bar
Spring—Flat Steel Elliptic
Gears—Galvanized Malleable Iron, Exposed
Clamps—Galvanized Malleable Iron; Adjustable; Open 1½ inches
Castings—Galvanized Iron

	Rolls	Weight Per Dozen	Per Dozen
No. R100—Regular Bearings	10x1¾ inches	240 lbs.	**$61 00**
No. R101—Regular Bearings	11x1¾ inches	248 lbs.	**67 00**
† No. R102—Regular Bearings	12x1¾ inches	260 lbs.	**74 00**
No. R190—Ball Bearings	10x1¾ inches	260 lbs.	**69 00**
No. R191—Ball Bearings	11x1¾ inches	268 lbs.	**75 00**
† No. R192—Ball Bearings	12x1¾ inches	280 lbs.	**82 00**

Quarter Dozen in a Case

FALCON

Rolls Not Warranted

Rolls White Rubber
Frame—Varnished Natural Maple
Spring—Hard Rubber Pressure Spring
Gears—Galvanized Malleable Iron; Exposed
Clamps—Galvanized Malleable Iron, Adjustable; Open 1¾ inches
Castings—Galvanized Iron

	Per Dozen
No. F10—Regular Bearings; 10x1¾ inch Rolls; Weight per Dozen 216 lbs.	**$45 00**
No. F11—Regular Bearings; 11x1¾ inch Rolls; Weight per Dozen 228 lbs.	**50.00**

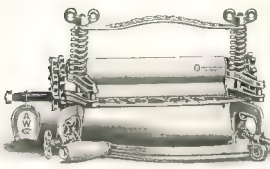
Half Dozen in a Case

† Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

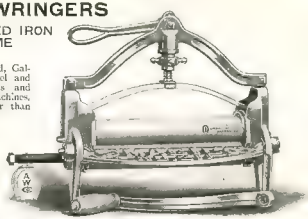
"DIAMOND EDGE IS A QUALITY PLEDGE"

CLOTHES WRINGERS

GALVANIZED IRON FRAME



For Wood, Galvanized Steel and Stone Tubs and Washing Machines, not Thicker than 1½ inches.



ROYAL

Rolls Warranted for 5 Years

Galvanized Malleable Iron Frame and Castings; Galvanized Spiral Steel Coil Pressure Springs.

	Rolls	Weight Per Dozen	Per Dozen
No. R530—Regular Bearings	10x1¾ inches	236 lbs.	**$ 83 00**
No. R531—Regular Bearings	11x1¾ inches	244 lbs.	**92 00**
✣ **No. R532—Regular Bearings**	12x1¾ inches	258 lbs.	**100 00**
✣ **No. R536—Regular Bearings**	11x1¾ inches	240 lbs.	**120 00**
No. R537—Ball Bearings	10x1¾ inches	256 lbs.	**91 00**
No. R538—Ball Bearings	11x1¾ inches	264 lbs.	**98 00**
✣ **No. R539—Ball Bearings**	12x1¾ inches	208 lbs.	**106 00**

Quarter Dozen in a Case

MAGIC

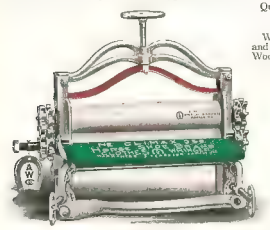
Rolls Warranted for 2 Years

Galvanized Malleable Iron Frame and Castings, Flat Steel Arched Pressure Spring

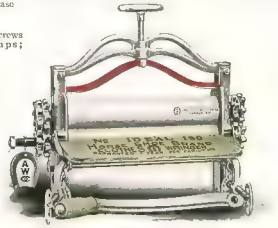
With Eccentric Top Lever, which Adjusts the Pressure and also Clamps the Wringer to the Tub.

With Enclosed Cog Wheel Gearing; Iron Apron.

	Rolls	Weight per Dozen, 260 lbs.	Per Dozen
No. M211—	11x1¾ inch Rolls; **Regular Bearings;**		**$78 00**



With Top Pressure Screws and Adjustable Clamps; Wood Apron.



CLIMAX

Rolls Warranted for 3 Years

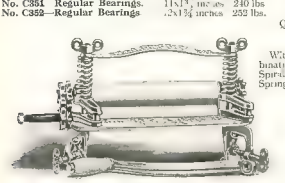
	Rolls	Weight Per Dozen	Per Dozen
No. C350—Regular Bearings	10x1¾ inches	220 lbs.	**$71.00**
✣ **No. C351—Regular Bearings**	11x1¾ inches	240 lbs.	**78 00**
✣ **No. C352—Regular Bearings**	12x1¾ inches	252 lbs.	**86 00**

Quarter Dozen in a Case

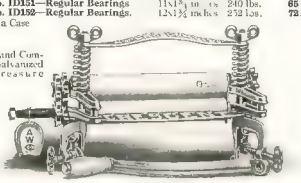
IDEAL

Rolls Warranted for 1 Year

	Rolls	Weight per Dozen	Per Dozen
No. ID150—Regular Bearings	10x1¾ inches	228 lbs.	**$59 00**
No. ID151—Regular Bearings	11x1¾ inches	240 lbs.	**65 00**
No. ID152—Regular Bearings.	12x1¾ inches	252 lbs.	**72.00**



With Relief Screws and Combination Clamps, Galvanized Spiral Steel Coil Pressure Springs.



★IRON QUEEN

Rolls Warranted for 1 Year

	Rolls	Weight per Dozen	Per Dozen
No. 22—Regular Bearings	10x2¼ inches	215 lbs.	**$59.00**

Quarter or Half Dozen in a Case

CRESCENT

Rolls Warranted for 1 Year

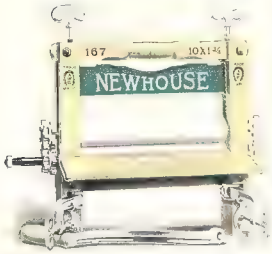
	Rolls	Weight per Dozen	Per Dozen
No. C130—Regular Bearings	10x1¾ inches	236 lbs.	**$59 00**
No. C131—Regular Bearings	11x1¾ inches	240 lbs.	**65 00**
✣ **No. C132—Regular Bearings**	12x1¾ inches	248 lbs.	**72 00**
No. C137—Ball Bearings	10x1¾ inches	256 lbs.	**68 00**
No. C138—Ball Bearings	11x1¾ inches	260 lbs.	**73 00**
✣ **No. C139—Ball Bearings.**	12x1¾ inches	268 lbs.	**80.00**

Quarter Dozen in a Case

✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

CLOTHES WRINGERS

For Wood, Galvanized Steel or Stone Tubs and Washing Machines, not over 1¾ inches Thick



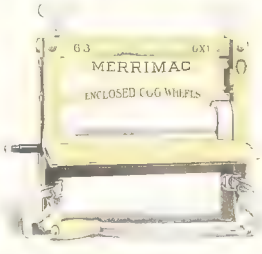
★NEWHOUSE

Rolls Warranted for 3 Years

Rolls—White Rubber, Elastic and Durable.
Frame—Rock Maple, Natural Wood, Varnished, Cross Bar Laminated in Front.
Springs—Coil Spiral Steel Coil.
Clamps—Galvanized Malleable Iron, Adjustable; Open 2 inches.
Gears—Exposed; Galvanized Double.

		Weight Per Roll, in Pounds	Price Per Dozen
No. N167	Regular Bearings	10x1¾, inches	$71 00
No. N168	Regular Bearings	11x1¾, inches	78 00
No. N177	Ball Bearings	8½x1¾ inches	80 00
No. N178—Ball Bearings		11x1¾ inches	87 00

Quarter Dozen in a Case



★MERRIMAC

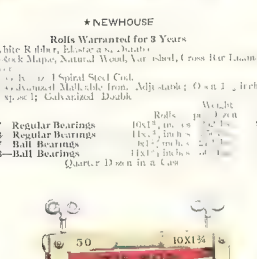
Rolls Warranted for 1 Year

Rolls—White Rubber, Elastic and Durable.
Frame—Rock Maple, Natural Wood, Varnished; Cross Bar Laminated in Front.
Springs—Flat Steel, Elliptical; Laminated in Coil.
Clamps—Galvanized Malleable Iron, Adjustable; Open 1½ inches.
Gears—Enclosed with Galvanized Shields.

		Per Dozen
No. M63	Regular Bearings; 11x1¾ inch Rolls; Weight per Pair 25 lbs.	$64 00
No. M73—Ball Bearings; 11x1¾ inch Rolls; Weight per Dozen 225 lbs.		72 00

One Dozen in a Case.

Mizzoo



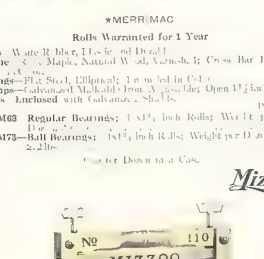
★TIP TOP

Rolls Warranted for 1 Year

Rolls—White Rubber, Elastic and Durable.
Frame—Rock Maple, Natural Wood, Varnished, Cross Bars Laminated in Center.
Springs—Flat Steel Elliptical Pressure, Laminated in Coil.
Clamps—Galvanized Malleable Iron, Adjustable; Open 2½ inches.
Gears—Exposed; Galvanized; Double.

		Weight per Roll	Price per Dozen
No. T50	Regular Bearings	8x1¾ inches	$61 00
No. T51	—Regular Bearings	11x1¾ inches	67 00
No. T180	Ball Bearings	8x1¾ inches	68 00
No. T181	Ball Bearings	11x1¾ inches	75 00

Quarter Dozen in a Case



★MIZZOO

Rolls not Warranted

Rolls—White Rubber.
Frame—Rock Maple, Natural Wood Varnished.
Spring—Flat Rubber Pressure Spring.
Clamps—Galvanized Malleable Iron; Adjustable; Open 1½ inches.
Gears—Cross Cut Double Cog Wheels; Malleable Iron.

		Per Dozen
No. M110	Regular Bearings; 10x1¾ inch Rolls; Weight per Dozen 210 lbs.	$45 00
No. M111	Regular Bearings; 11x1¾ inch Rolls; Weight per Dozen 228 lbs.	50 00

One Dozen in a Case

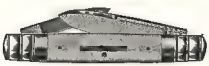
POCKET KNIVES

★ENTERPRISE CUTLERY CO., GERMANY

Imported; Made Up and Sold at a Price; Will Give Good Service for Purposes Intended. Well Made and Finished. NOT GUARANTEED

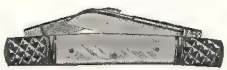
TWO BLADE PENS

Cuts Three Quarter Size



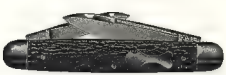
Length 3¼ inches; German Silver Double Rat Tail Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen
F263P—Pearl Handle..... **$10.00**



Congress Pattern; Length 3⅜ inches; German Silver Checkered Bolsters; One Large Congress and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 14 ozs.

Per Dozen
No. F265P Pearl Handle **$10 00**



Senator Pattern; Length 3½ inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Glazed; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen
No. F290ST—Patent Stag Handle. **$5.00**

Wharncliffe Pattern; Length 3½ inches; German Silver Flush Bolsters; One Large Clip and One Small Pen Blade, Glazed; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen
No. F289ST—Patent Stag Handle **$5 00**

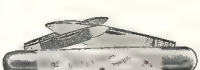
THREE BLADE PENS

Wharncliffe Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Wharncliffe and Two Small Pen Blades, Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen.
No. F304P—Pearl Handle **$11 00**

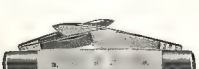
Length 3 inches; German Silver Flush Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen
No. F301P—Pearl Handle.....**$10.00**



Sleeve Board Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished, German Silver Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen
No. 6305P -Pearl Handle **$10.00**



Length 3 inches; German Silver Flush Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen
No. 6306P—Pearl Handle..... **$10 00**

Length 3¼ inches; German Silver Fancy Fluted Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen
No. F302P—Pearl Handle..... **$11.00**

Half Dozen in a Box

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TWO BLADE PENS

Cuts Three Quarter Size

Senator Pattern; Length 2¾ inches; German Silver Ribbed Bolsters; One Large Spear and One Small Pen Blade, Glazed; German Silver Lining; No Shield; Weight per Dozen 6 ozs.

Per Dozen

No. F239P Pearl Handle..... **$5.00**

Senator Pattern; Length 2¾ inches; German Silver Ribbed Bolsters; One Large Spear and One Small Pen Blade, Glazed; German Silver Lining; No Shield; Weight per Dozen 6 ozs.

Per Dozen

No. F240P—Pearl Handle..... **$5.00**

Senator Pattern; Length 2½ inches; Polished Steel Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Iron Lining; No Shield, Weight per Dozen 6 ozs.

Per Dozen

No. F276P—Pearl Handle.. ..... **$5.00**

Length 2½ inches; Polished Steel Bolsters; One Large Spear and One Small Pen Blade, Glazed, Iron Lining; No Shield; Weight per Dozen 6 ozs.

Per Dozen

No. F282P—Pearl Handle..... **$5.00**

Length 2¾ inches; German Silver Ribbed Bolsters; One Large Spear and One Small Pen Blade; Full Polished; German Silver Lining, No Shield; Weight per Dozen 4 ozs.

Per Dozen

No. F235P—Pearl Handle **$5.00**

Length 2¾ inches; Polished Steel Ribbed Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Iron Lining; No Shield, Weight per Dozen 4 ozs.

Per Dozen

No. F277P—Pearl Handle..... **$5.00**

Congress Pattern; Length 2½ inches; German Silver Bolsters; One Large Congress and One Small Pen Blade, Glazed; German Silver Lining; No Shield, Weight per Dozen 6 ozs.

Per Dozen

No. F243P—Pearl Handle..... **$5.00**

Serpentine Pattern; Length 2¾ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade, Glazed, Brass Lining, German Silver Shield; Weight per Dozen 6 ozs.

Per Dozen

No. F283ST—Patent Stag Handle .. **$5.00**

Congress Pattern; Length 2½ inches, Polished Steel Bolsters; One Large Congress and One Small Pen Blade; Full Polished; Iron Lining; No Shield; Weight per Dozen 6 ozs.

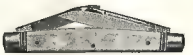
Per Dozen

No. F275P—Pearl Handle. .. **$5.00**

Sleeve Board Pattern; Length 2⅞ inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen

No. F246P—Pearl Handle.... .... . **$10.00**



Congress Pattern; Length 2⅞ inches, Polished Steel Knurled Bolsters; One Large Congress and One Small Pen Blade; Full Polished, Iron Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. F274P—Pearl Handle. **$10.00**

Wharncliffe Pattern; Length 2⅞ inches; German Silver Rat Tail Bolsters; One Large Congress and One Small Pen Blade; Full Polished, Brass Lining; No Shield; Weight per Dozen 8 ozs.

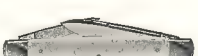
Per Dozen

No. F247P—Pearl Handle... . **$10.00**

Wharncliffe Pattern; Length 3 inches, German Silver Flush Bolsters; One Large Clip and One Small Pen Blade, Glazed; Brass Lining; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen

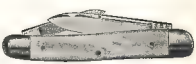
No. F284ST—Patent Stag Handle... . **$5.00**



Length 3 inches; German Silver Flat Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Iron Lining, No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. F273P—Pearl Handle **$10.00**



Wharncliffe Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade, Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. F289P—Pearl Handle..... **$10.00**

Half Dozen in a Box

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Cuts Three Quarter Size

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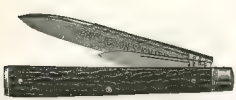
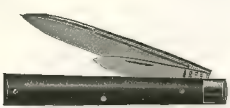
TWO BLADE JACKS



Physician's Pattern; Length 3½ inches; German Silver Scored Bolsters and Plain Seal Cap; One Large Spear and One Small Pen Blade; Half Polished and Stamped; Brass Lining; German Silver Shield; Weight per Dozen 20 ozs.

Per Dozen

No. F261ST—Patent Stag Handle..... **$8 50**



Physician's Pattern; Length 3½ inches; German Silver Flush Bolsters; Uncapped; One Large Spear and One Small Pen Blade, Glazed; Brass Lining; No Shield; Weight per Dozen 20 ozs.

Per Dozen

No. F210E —Ebony Handle..... **$5 00**
No. F210ST—Patent Stag Handle..... **5 00**

Regular Jack Pattern; Length 3¾ inches; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F203ST—Patent Stag Handle..... **$4.50**

Regular Jack Pattern; Length 3¾ inches; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; Brass Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F204ST—Patent Stag Handle..... **$4 00**

Regular Jack Pattern; Length 3¾ inches; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F207ST Patent Stag Handle..... **$4.50**

Length 3¾ inches; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F206ST—Patent Stag Handle..... **$4.50**

Boy's Jack Pattern; Length 2¾ inches; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; No Shield; Weight per Dozen 1¼ lbs.

Per Dozen

No. F21E— Ebonized Hard Wood Handle..... **$1.00**
No. F21W —White Bone Handle..... **1.00**

Easy Opener; Length 3¾ inches; with Chain; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed and Etched; Iron Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F213C —Walnut Handle..... **$4.70**
No. F213E —Ebony Handle..... **4.70**
No. F213ST—Patent Stag Handle..... **4.70**

Regular Jack Pattern; Length 3 inches; Polished Steel Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. F229R —Cocobolo Handle..... **$5 00**
No. F229E —Ebonized Hard Wood Handle..... **5 00**
No. F229ST—Patent Stag Handle..... **5 00**

Half Dozen in a Box

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TWO BLADE JACKS

Cuts Three Quarter Size

Gun Stock Pattern; Length 3½ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. F258ST—Patent Stag Handle..... **$8.50**

Gun Stock Pattern; Length 3⅝ inches; German Silver Knurled Bolster and Plain Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

No. F258ST—Patent Stag Handle..... **$8.50**

Serpentine Pattern; Length 3⅜ inches; German Silver Rat Tail Bolster and Cap; One Large Clip and One Small Pen Blade; Half Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. F256ST Patent Stag Handle..... **$8.50**

Length 3½ inches; German Silver Flush Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

No. F260ST Patent Stag Handle **$8 50**

Serpentine Pattern; Length 3⅝ inches; German Silver Flush Bolster and Cap; One Large Spear and One Small Pen Blade; Glazed and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. F257ST—Patent Stag Handle..... **$8.50**

Serpentine Pattern; Length 3¾ inches; German Silver Fancy Bolster and Cap; One Large Clip and One Small Pen Blade; Glazed and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¾ lbs.

Per Dozen

No. F251ST –Patent Stag Handle..... **$8.50**

Physicians' Pattern; Length 3¾ inches; German Silver Scored Bolster and Seal Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F253ST—Patent Stag Handle..... **$8 50**

Physicians' Pattern; Length 3⅝ inches; German Silver Fluted Rat Tail Bolster and Plain Seal Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. F255ST Patent Stag Handle..... **$8.50**

Half Dozen in a Box

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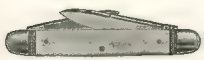
TWO BLADE PENS

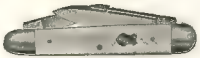
Cuts Three Quarter Size



Senator Pattern; Length 3 inches; German Silver Knurled Bolsters, One Large Spear and One Small Pen Blade; Full Polished; Iron Lining; No Shield; Weight per Dozen 10 ozs.

Per Dozen

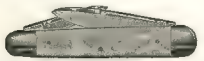
No. F272P—Pearl Handle.. . . .. **$10 00**



Sleeve Board Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 10 ozs.

Per Dozen

No. F271P—Pearl Handle..... .. . . **$10 00**



Sleeve Board Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. F270P—Pearl Handle **$10 00**

Wharncliffe Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade, Glazed; Brass Lining; German Silver Shield; Weight per Dozen 10 ozs.

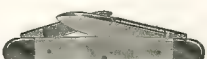
Per Dozen

No. F285ST—Patent Stag Handle **$5 00**

Sleeve Board Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Half Polished; Brass Lining, German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen

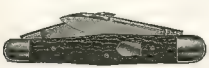
No. F287W —White Bone Handle **$5 00**
No. F287ST Patent Stag Handle..... **5 00**



Senator Pattern; Length 3½ inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 12 ozs.

Per Dozen

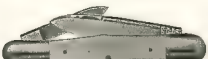
No. F266P—Pearl Handle.....**$10 00**



Balloon Pattern; Length 3½ inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen

No. F238ST—Patent Stag Handle..... .... **$5.00**



Balloon Pattern; Length 3½ inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. F268P—Pearl Handle **$10 00**

Senator Pattern; Length 3½ inches; German Silver Flush Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. F267P—Pearl Handle.. ....**$10 00**

Sleeve Board Pattern; Length 3½ inches; Uncapped; One Large Spear and One Small Pen Blade, Glazed; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen

No. F218W —White Bone Handle. **$3 00**
No. F218ST—Patent Stag Handle. **2.50**

Half Dozen in a Box

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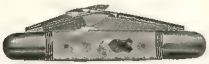
THREE BLADE PENS

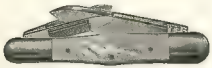
Cuts Three Quarter Size



Senator Pattern; Length 3¼ inches; German Silver Scored Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen

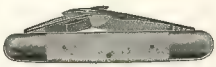
No. F300P—Pearl Handle **$11 00**



Balloon Pattern, Length 3½ inches; German Silver Flush Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining, No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. F303P—Pearl Handle **$11.00**

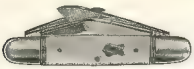


Senator Pattern; Length 3⅜ inches, German Silver Flush Bolsters; One Large Spear, One small Pen and One File Blade; Full Polished; German Silver Lining; No Shield; Weight per Dozen 18 ozs.

Per Dozen

No. 6304P—Pearl Handle **$10.00**

FOUR BLADE PENS



Senator Pattern; Length 3 inches; German Silver Scored Bolsters; One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining, German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. F406P—Pearl Handle **$10 50**

Senator Pattern; Length 3¼ inches; German Silver Scored Bolsters; One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. F400P—Pearl Handle **$11.00**

Senator Pattern; Length 3¼ inches; German Silver Scored Bolsters; One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. F403P—Pearl Handle **$11.00**

Senator Pattern, Length 3¼ inches; German Silver Flush Bolsters; One Large Spear, Two Small Pens and One File Blade; Full Polished, Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. 6403P—Pearl Handle **$10 00**

Congress Pattern; Length 3 inches; German Silver Flush Bolsters, One Large Congress, Two Small Pens and One File Blade, Full Polished; Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. F401P—Pearl Handle **$10.00**

Congress Pattern; Length 3¾ inches; German Silver Fancy Scored Bolsters; One Large Congress, Two Small Pens and One File Blade; Glazed; Brass Lining; No Shield, Weight per Dozen 18 ozs.

Per Dozen

No. F404P—Pearl Handle **$11.00**

Half Dozen in a Box

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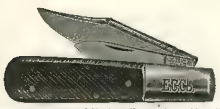
ONE AND TWO BLADE BARLOWS

Cuts Three Quarter Size

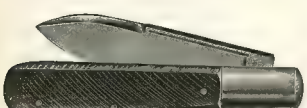


German Barlow; Length 3⅝ inches; **Brown Bone Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 1¾ lbs.

		Per Dozen
No. F215SPR	—Large **Spear** and Small Pen Blade	$5.00
No. F215CLIP	—Large **Clip** and Small Pen Blade	5.00
No. F215SHEEP	—Large **Sheep Foot** and Small Pen Blade	5.00

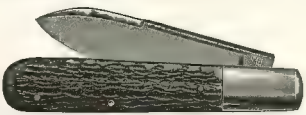
German Barlow; Length 3⅝ inches; **Patent Stag Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 1¾ lbs.

		Per Dozen
No. F214SPR	—Large **Spear** and Small Pen Blade	$4.00
No. F214CLIP	—Large **Clip** and Small Pen Blade	4.00
No. F214SF	—Large **Sheep Foot** and Small Pen Blade	4.00
No. F214SPEY	—Large **Speying** and Small Pen Blade	4.00
No. F214RZ	—Large **Razor** and Small Pen Blade	4.00



German Barlow; Length 4¾ inches; **Brown Bone Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 2⅝ lbs.

		Per Dozen
No. F107SPR	—Large **Spear** Blade	$5.00
No. F107CLIP	—Large **Clip** Blade	5.00



German Barlow; Length 4¾ inches; **Patent Stag Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 2⅝ lbs.

		Per Dozen
No. F106SPR	—Large **Spear** Blade	$5.00
No. F106CLIP	—Large **Clip** Blade	5.00

One Dozen in a Box

JOHN RUSSELL & CO., GREEN RIVER WORKS

John Russell's Barlow; Length 3⅝ inches; **Brown Bone Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 2⅛ lbs.

		Per Dozen
No. J62	—Large **Spear** and Small Pen Blade	$5.50
No. J63	—Large **Clip** and Small Pen Blade	5.50
No. J64	—Large **Sheep Foot** and Small Pen Blade	5.50
No. J3603	—Large **Speying** and Small Pen Blade	6.00
No. J65	—Large **Razor** and Small Pen Blade	6.00

John Russell's Barlow; Length 3⅛ inches; **Brown Bone Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 1⅝ lbs.

		Per Dozen
No. J60	—Large **Spear** Blade	$3.60
No. J65	—Large **Clip** Blade	3.60
No. J603	—Large **Speying** Blade	4.00

One Dozen in a Box

John Russell's Barlow; Length 5 inches; **Brown Bone Handle;** Polished Steel Bolsters; Iron Lining; Glazed Blades; Weight per Dozen 3½ lbs.

		Per Dozen
No. J601	—Regular Opener; Large **Spear** Blade	$6.50
No. J6000	—Easy Opener; Large **Clip** Blade	7.50

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

★ENTERPRISE CUTLERY CO., GERMANY

Imported; Made Up and Sold at a Price; Will Give Good Service for Purposes Intended. Well Made and Finished. NOT GUARANTEED

ONE AND TWO BLADE BOYS JACKS

Cuts Three Quarter Size

Boys' Jack Pattern; Length 2⅞ inches, with Chain; Polished Rat Tail Bolsters; One Large Sheep Foot Blade, Glazed; Iron Lining; Weight per Dozen 16 ozs.

Per Dozen

No. F15—Brown Japanned Metal, Imitation Stag Handle **$1 90**

Boys' Jack Pattern; Length 2¾ inches; with Chain; Polished Rat Tail Bolsters; One Large Sheep Foot and One Small Pen Blade, Glazed, Iron Lining; Weight per Dozen 22 ozs

Per Dozen

No. F22—Brown Japanned Metal, Imitation Stag Handle. . **$2 30**

Boys' Jack Pattern; Length 2⅝ inches; One Large Spear Blade, Glazed; Iron Lining; Weight per Dozen 18 ozs.

Per Dozen

No. F25—Bright Tin Handle, Corrugated **$0 90**

Boys' Jack Pattern; Length 2¾ inches; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; Weight per Dozen 12 ozs.

Per Dozen

No. F19—Bright Tin Handle, Warship Design. **$1 50**

Swayback Boys' Jack Pattern, Length 2¾ inches, One Large Sheep Foot Blade, Glazed, Iron Lining; Polished Shield; Weight per Dozen 10 ozs.

Per Dozen

No. F13—Black Japanned Metal, Imitation Stag Handle . **$1 00**

Boys' Jack Pattern; Length 2¾ inches; One Large Sheep Foot Blade, Glazed; Iron Lining; Bright Bolsters; Weight per Dozen 10 ozs.

Per Dozen

No. F14—Brown Japanned Metal, Imitation Stag Handle. **$1.00**

Boys' Jack Pattern; Length 2¾ inches; One Large Spear Blade, Glazed; Iron Lining; Weight per Dozen 10 ozs.

Per Dozen

No. F16—Black Painted Tin Handle, Eagle Design. **$0.80**

Boys' Jack Pattern; Length 2¾ inches, Polished Steel Flush Bolsters; One Large Spear Blade, Glazed; Iron Lining; No Shield, Weight per Dozen 10 ozs.

Per Dozen

No. F12W—White Bone Handle. **$1 50**

Boys' Jack Pattern; Length 3¼ inches; Polished Steel Rat Tail Bolsters; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; No Shield, Weight per Dozen 22 ozs.

Per Dozen

No. F251—Brown Japanned Imitation Stag, Iron Handle. **$2 30**

Boys' Jack Pattern; Length 3¾ inches; Polished Iron Bolsters; One Large Spear Blade, Glazed; Unlined; Weight per Dozen 20 ozs.

Per Dozen

No. F100—Black Malleable Cast Iron, Embossed Handle. **$1.90**

Boys' Jack Pattern; Length 3¾ inches, Polished Rat Tail Bolsters; One Large Spear Blade, Glazed, Iron Lining; Weight per Dozen 20 ozs.

Per Dozen

No. F101—Brown Japanned Metal, Imitation Stag Handle. **$2.40**

One Dozen in a Box

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American Made; High Grade English Steel Blades, Carefully Forged, Ground and Tempered; Free from Flaws and Imperfections. FULLY GUARANTEED.

TWO BLADE JACKS

Cuts Three Quarter Size

Length 3⅞ inches; German Silver Fancy Bolster and Cap; One Large Clip and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 23¼ lbs.

Per Dozen

No. 2B136$\frac{1}{2}$ST—Patent Stag Handle **$17 00**

Length 4¼ inches; German Silver Bolster and Cap; One Large Clip and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen [illegible]

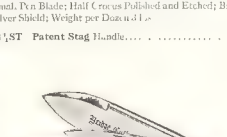
Per Dozen

No. 2B196½ST Patent Stag Handle **$16 00**

Length 4⅛ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield, Weight per Dozen 33¼ lbs.

Per Dozen

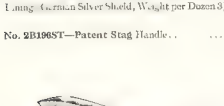
No. 2B196ST—Patent Stag Handle **$16 00**



With 24 inch Bright Wire Chain and Metal Button Loop; Length 3¾ inches; Polished Steel Bolster and Cap; One Large Spear and One Small Pen Blade; Glazed and Etched, Iron Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen

No. 2B246—Cocobolo Handle **$10 50**

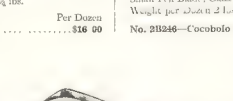


Length 3⅜ inches; Polished Steel Bolster; One Large Spear and One Small Pen Blade, Glazed; Iron Lining; German Silver Shield, Weight per Dozen 15½ lbs.

Per Dozen

No. 2B2 —Cocobolo Handle **$5 00**

No. 2B2ST—Patent Stag Handle **5 00**



Length 3⅜ inches; Polished Steel Bolster; One Large Spear Point and One Small Pen Blade, Glazed; Iron Lining; no Shield, Weight per Dozen 13¼ lbs.

Per Dozen

No. 2B2½ —Cocobolo Handle **$5 00**

No. 2B2½ST Patent Stag Handle **5.50**

Length 3⅜ inches; German Silver Bolster; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 13¼ lbs.

Per Dozen

No. 2B74W White Bone Handle **$10.00**

Half Dozen in a Box

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American Made; High Grade English Steel Blades, Carefully Forged. Ground and Tempered; Free from Flaws and Imperfections. FULLY GUARANTEED.

FOUR BLADE PENS

Cuts Three Quarter Size

Congress Pattern; Length 3¾ inches; Polished Steel Rat Tail Bolsters; Two Large Congress and Two Small Pen Blades; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 22 ozs.

Per Dozen
No. 4B214½ST—Patent Stag Handle..... $19.00

EQUAL END JACKS

Length 3¼ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1½ lbs

Per Dozen
No. 2B232 —Cocobolo Handle..... $10.00
No. 2B232E —Ebony Handle..... 10.00
No. 2B232ST—Patent Stag Handle..... 10.00

Jumbo Sleeve Board Pattern; Length 3½ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

Per Dozen
No. 2B304ST—Patent Stag Handle..... $15 00

Length 3⅝ inches; German Silver Scored Bolsters; One Large Spear and One Large Clip Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen
No. 2B198ST—Patent Stag Handle..... $15 00

Length 3⅝ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen
No. 2B200ST Patent Stag Handle..... $11 50

Balloon Pattern; Length 3¾ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1⅝ lbs

Per Dozen
No. 2B197ST Patent Stag Handle..... $10 00

Stock Pattern; Length 3⅞ inches; German Silver Bolsters; One Large Clip and One Large Spaying Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen
No. 2B188¾ST—Patent Stag Handle..... $15 50

Half Dozen in a Box

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TWO BLADE PENS

Cuts Three Quarter Size

Congress; Length 3¼ inches; Polished Steel Rat Tail Bolsters, One Large Congress and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, No Shield; Weight per Dozen 14 ozs.

Per Dozen

No. 2B15½ST—Patent Stag Handle... $10 60

Length 3¼ inches; German Silver Tipped; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. 2B209ST Patent Stag Handle.. $15 00

No. 2B209P —Pearl Handle..... .. 31.00

Length 3¼ inches; German Silver Scored Bolsters; One Large Wharncliffe and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. 2B313P—Pearl Handle.. ..... $26 00

Congress; Length 3¾ inches; German Silver Bolsters; One Large Congress and One Small Pen Blade; Half Crocus Polished and Etched, Brass Lining, No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. 2B205½ST—Patent Stag Handle $10 00

Length 3¼ inches; German Silver Bolsters; One Large Clip and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield, Weight per Dozen 16 ozs.

Per Dozen

No. 2B259¾P—Pearl Handle.... .$27 00

Length 3¼ inches; German Silver Tipped One Large Clip and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield, Weight per Dozen 16 ozs.

Per Dozen

No. 2B318¾ST—Patent Stag Handle. $15 00

Congress; Length 3¾ inches; Polished Steel Rat Tail Bolsters; One Large Congress and One Small Pen Blade; Half Crocus Polished and Etched; Iron Lining, No Shield; Weight per Dozen 1½ lbs.

Per Dozen

No. 2B163½ST—Patent Stag Handle.....$14 00

Length 3¾ inches; German Silver Scored Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 1½ lbs.

Per Dozen

No. 2B314ST—Patent Stag Handle.....$15 00

THREE BLADE PENS

Lobster Pattern; Length 3¼ inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Crocus Polished and Etched; Brass Lining; No Shield; Weight per Dozen 14 ozs.

Per Dozen

No. 3B211P Pearl Handle..... $44 00

Sleeve Board Pattern; Length 3¼ inches; German Silver Scored Bolsters; One Large Spear One Small Pen and One File Blade; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 22 ozs.

Per Dozen

No. 3B305—Stained Bone Handle, Purple Color $20 50

Wharncliffe Pattern; Length 3¼ inches; German Silver Tipped; One Large Spear and Two Small Pen Blades; Half Crocus Polished and Etched; Brass Lining, German Silver Shield; Weight per Dozen 20 ozs.

Per Dozen

No. 3B208ST—Patent Stag Handle. . $19 00

No. 3B208P Pearl Handle.... . 36 00

Half Dozen in a Box

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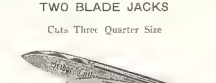
TWO BLADE JACKS

Cuts Three Quarter Size

Length 3¼ inches, German Silver Bolsters and Cap; One Large Spear and One Small Pen Blade, Half Polished and Etched; Brass Lining, German Silver Shield, Weight per Dozen 22 ozs.

		Per Dozen
No. 2B307	—Ebony Handle	$11 00
No. 2B307ST	—Patent Stag Handle	11 50
No. 2B307P	—Pearl Handle	23 00

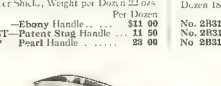


Length 3¼ inches; German Silver Scored Bolsters and Plain Cap; One Large Spear and One Small Pen Blade, Half Polished and Etched, Brass Lining; German Silver Shield, Weight per Dozen 18 ozs.

		Per Dozen
No. 2B315	—Cocobolo Handle	$11 00
No. 2B315E	—Ebony Handle	11 00
No. 2B315ST	—Patent Stag Handle	11 00

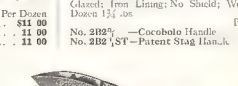
Length 3¼ inches; Polished Steel Bolsters, One Large Clip and One Small Pen Blade, Glazed; Iron Lining; No Shield; Weight per Dozen 13¼ lbs.

		Per Dozen
No. 2B2½	—Cocobolo Handle	$5 00
No. 2B2½ST	—Patent Stag Handle	5 00



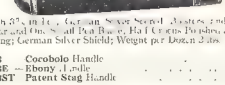
Length 3¾ inches, German Silver Scored Bolsters and Cap; One Large Spear and One Small Pen Blade, Half Polished and Etched, Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

		Per Dozen
No. 2B233	Cocobolo Handle	$10 00
No. 2B233E	—Ebony Handle	10 00
No. 2B233ST	Patent Stag Handle	10 00



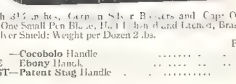
Length 3¼ inches, German Silver Bolsters and Cap; One Large Spear and One Small Pen Blade, Half Polished and Etched, Brass Lining, German Silver Shield; Weight per Dozen 2 lbs.

		Per Dozen
No. 2B57	—Cocobolo Handle	$10 00
No. 2B57E	Ebony Handle	10 00
No. 2B57ST	—Patent Stag Handle	10 00



Length 3¼ inches, Polished Steel Bolsters and Cap; One Large Spear and One Small Pen Blade, Glazed and Etched, Iron Lining; German Silver Shield, Weight per Dozen 13¼ lbs.

		Per Dozen
No. 2B321E	Ebony Handle	$8 50
No. 2B321ST	Patent Stag Handle	9 00

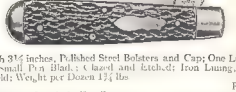


Length 3¼ inches, Polished Steel Bolsters and Cap; One Large Clip and One Small Pen Blade, Glazed and Etched; Iron Lining, German Silver Shield; Weight per Dozen 13¼ lbs.

		Per Dozen
No. 2B321½	—Cocobolo Handle	$8 50
No. 2B321½ST	Patent Stag Handle	9 00

Length 3¼ inches; German Silver Bolsters and Cap, One Large Clip and One Small Pen Blade, Glazed and Etched, Brass Lining, German Silver Shield, Weight per Dozen 2 lbs.

		Per Dozen
No. 2B263½	—Cocobolo Handle	$10 00
No. 2B263½E	Ebony Handle	10 00
No. 2B263½ST	—Patent Stag Handle	10 50



Length 3¼ inches German Silver Bolsters and Cap, One Large Clip and One Small Pen Blade, Glazed and Etched; Brass Lining; German Silver Shield; Weight per Dozen 13¼ lbs.

		Per Dozen
No. 2B320½ST	Patent Stag Handle	$11 50

Half Dozen in a Box

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TWO BLADE JACKS

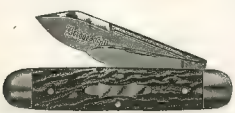
Cuts Three Quarter Size

Length 3½ inches; German Silver Bolsters and Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1⅝ lbs.

		Per Dozen
No. 2B216	—Cocobolo Handle	$10 00
No. 2B216E	—Ebony Handle	10.00
No. 2B216ST	—Patent Stag Handle	10.00

Length 3¼ inches; German Silver Rat Tail Bolsters; One Large Clip and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

		Per Dozen
No. 2B234½	—Cocobolo Handle	$10 50
No. 2B234½E	—Ebony Handle	10.50
No. 2B234½ST	—Patent Stag Handle	11.00



Length 3½ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

		Per Dozen
No. 2B27	—Cocobolo Handle	$10 00
No. 2B27E	—Ebony Handle	10 00
No. 2B27ST	—Patent Stag Handle	11.00
No. 2B27GST	—Genuine Stag Handle	15.00

Easy Opener; Length 3½ inches; German Silver Bolsters and Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Luning; German Silver Shield; Weight per Dozen 2¼ lbs.

		Per Dozen
No. 2B22EO	—Cocobolo Handle	$10.00
No. 2B22EEO	—Ebony Handle	10.00
No. 2B22SEO	—Patent Stag Handle	11.00

Length 3½ inches; German Silver Bolsters and Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

		Per Dozen
No. 2B22	—Cocobolo Handle	$10 00
No. 2B22E	—Ebony Handle	10 00
No. 2B22ST	—Patent Stag Handle	11.00

Length 3¼ inches; Polished Steel Bolsters and Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¾ lbs.

		Per Dozen
No. 2B8E	—Ebony Handle	$12.00
No. 2B8ST	—Patent Stag Handle	13.00

Congress Jack; Length 3½ inches; Polished Steel Rat Tail Bolsters; One Large Wharncliffe and One Small Pen Blade; Half Crocus Polished and Etched; Brass and Iron Lining; German Silver Shield; Weight per Dozen 1⅞ lbs.

		Per Dozen
No. 2B316ST	—Patent Stag Handle	$11.50

Length 3¾ inches; German Silver Bolsters and Cap; One Large Clip and One Small Pen Blade; Glazed and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2 lbs.

		Per Dozen
No. 2B225½ST	—Patent Stag Handle	$15.00

Half Dozen in a Box

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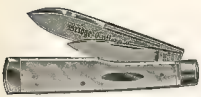
TWO BLADE JACKS

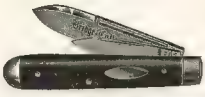
Cuts Three Quarter Size



Length 3 inches; German Silver Bolster and Cap, One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 22 ozs.

Per Dozen

No. 2B310P—Pearl Handle **$36 00**



Length 3 inches; Polished Steel Bolster and Cap; One Large Spear and One Small Pen Blade; Glazed and Etched; Iron Lining; German Silver Shield; Weight per Dozen 18 ozs.

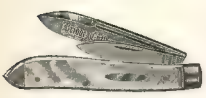
Per Dozen

No. 2B5E —Ebony Handle..... .. **$7 50**
No. 2B5ST—Patent Stag Handle..... **8.00**

Serpentine Pattern; Length 3 inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. 2B308 —Cocobolo Handle **$11 00**
No. 2B308ST —Patent Stag Handle ... **11 00**
No. 2B308P —Pearl Handle **29.50**



Serpentine Pattern; Length 3¼ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Glazed; Brass Lining; German Silver Shield; Weight per Dozen 20 ozs.

Per Dozen

No. 2B240 —Cocobolo Handle.....**$11 00**
No. 2B240E —Ebony Handle..... **11.00**
No. 2B240ST—Patent Stag Handle. . **11 50**
No. 2B240P Pearl Handle **26 00**

Stock Pattern; Length 3¼ inches; German Silver Bolster and Cap; One Large Clip and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 20 ozs.

Per Dozen

No. 2B319½E —Ebony Handle.. . . . .**$11 50**
No. 2B319½ST Patent Stag Handle.. **12 00**

Length 3¼ inches; Polished Steel Bolster; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1½ lbs.

Per Dozen

No. 2B7ST—Patent Stag Handle..... **$9 50**

Swayback Pattern; Length 3¼ inches; Polished Steel Rat Tail Bolster and Plain Cap; One Large Sheep Foot and One Small Pen Blade; Half Crocus Polished and Etched; Iron Lining; German Silver Shield; Weight per Dozen 22 ozs.

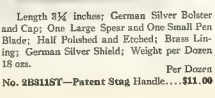
Per Dozen

No. 2B317½ST—Patent Stag Handle. .**$10.00**

Length 3¼ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. 2B306E —Ebony Handle.... **$11 00**
No. 2B306ST—Patent Stag Handle.... **12 00**



Length 3¼ inches; German Silver Bolster and Cap; One Large Spear and One Small Pen Blade; Half Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. 2B311ST—Patent Stag Handle....**$11.00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

BRIDGE CUTLERY CO. POCKET KNIVES

This Brand of American-made Pocket Knives we Control for the U. S. The Blades are Manufactured from S. & C. Wardlow's Steel. It is a Line of Goods that We Offer to the Trade who Want Something Not Quite as Good as Our Diamond Edge Brand. The Knives are Well Made Throughout; are Attactively Finished and will Give Good Service. They Are the Equal of the Average Line of American Knives Offered to the Trade To-day.

BRIDGE CUTLERY COMPANY

Warranted Pocket Knives

We guarantee all knives bearing our brand to be free from flaws and imperfections. Any not proving so will be replaced; but we will not redeem knives that are worn out, that show abuse, or when more than one blade is broken, or that have been improperly sharpened by laying flat on a stone.

In whetting a pocket knife use a good oil-stone, holding the blade at an angle of twenty degrees, and draw toward you, from heel to point. Do not lay flat like a razor. Oil the joints occasionally, as they are liable to wear rough and the blade points protrude.

BRIDGE CUTLERY COMPANY

ST. LOUIS, MO

Fac-simile of the Circular Wrapped Around Each Bridge Pocket Knife.

POCKET KNIVES

*BRIDGE CUTLERY CO.

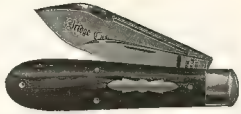
American Made; High Grade English Steel Blades, Carefully Forged. Ground and Tempered; Free from Flaws and Imperfections. FULLY GUARANTEED.

TWO BLADE JACKS

Cuts Three Quarter Size

Length 3 inches; German Silver Scored Bolster; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 20 ozs.

		Per Dozen
No. 2B239	—**Cocobolo** Handle	**$10.00**
No. 2B239E	—**Ebony** Handle	**10.00**
No. 2B239ST	**Patent Stag** Handle	**10.00**



Length 2⅝ inches; Polished Steel Bolster; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

		Per Dozen
No. 2B21	—**Cocobolo** Handle	**$9.50**
No. 2B21E	—**Ebony** Handle	**9.50**
No. 2B21ST	—**Patent Stag** Handle	**10.00**

Easy Opener; Length 3¼ inches; Polished Steel Bolster; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2¼ lbs.

Per Dozen
No. 2B21SEO—Patent Stag Handle..... **$10.00**

Length 3⅛ inches; German Silver Bolster; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen
No. 2B18RB—Stained Red Bone Handle, Red Color..... **$11.00**

TWO BLADE BARLOWS

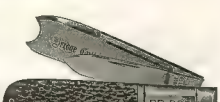
Patent Stag Handle; Length 3¼ inches; Polished Steel Bolster; Half Crocus Polished and Etched Blades; Iron Lining; Weight per Dozen 2 lbs

Per Dozen
No. 2B19ST —One Large **Spear** and One Small Pen Blade **$8.00**

Per Dozen
No. 2B19½ST—One Large **Clip** and One Small Pen Blade..... **$9.00**

Per Dozen
No. 2B19¼ST—One Large **Sheep Foot** and One Small Pen Blade..... **$9.00**

Per Dozen
No. 2B19⅝ST—One Large **Speying** and One Small Pen Blade **$9.00**



Per Dozen
No. 2B19⅞ST—One Large **Razor** and One Small Pen Blade..... **$9.00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

Bridge TRADE MARK

*BRIDGE CUTLERY CO.

Bridge TRADE MARK

American Made; High Grade English Steel Blades, Carefully Forged; Ground and Tempered; Free from Flaws and Imperfections FULLY GUARANTEED.

EQUAL END JACKS

Cuts Three Quarter Size

Balloon Pattern; Length 3⅞ inches; German Silver Double Rat Tail Bolsters; One Large Clip and One Large Spear Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

No. 2B207ST—Patent Stag Handle..... $10.00

Stock Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip and One Large Spaying Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 1¾ lbs.

Per Dozen

No. 2B201⅝ST—Patent Stag Handle $15 00

Length 4¼ inches, Width 1 inch; Polished Steel Bolsters; One Extra Large Broad Spear and One Small Spear Blade; Half Crocus Polished and Etched; Brass Lining, No Shield; Weight per Dozen 5 lbs.

Per Dozen

No. 2B309ST Patent Stag Handle $26 00

THREE BLADE JACKS

Length 3⅝ inches; German Silver Bolsters, One Large Spear and Two Small Pen Blades; Half Crocus Polished and Etched, Brass Lining; German Silver Shield; Weight per Dozen 2⅝ lbs.

Per Dozen

No. 3B204E—Ebony Handle $20.00

Cattle Knife; Length 3⅝ inches; German Silver Bolsters; One Large Spear, One Large Sheep Foot and One Small Pen Blade; Half Crocus Polished and Etched, Brass Lining; German Silver Shield; Weight per Dozen 2⅜ lbs.

Per Dozen

No. 3B108ST—Patent Stag Handle..... $17 00

Cattle Knife; Serpentine Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip, One Large Sheep Foot and One Large Spaying Blade, Half Crocus Polished and Etched; Brass Lining, Milled Center Scale; German Silver Shield; Weight per Dozen 2½ lbs.

Per Dozen

No. 3B218⅜ST –Patent Stag Handle..... $28 00

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

*BRIDGE CUTLERY CO.

American Made; High Grade English Steel Blades, Carefully Forged. Ground and Tempered; Free from Flaws and Imperfections. FULLY GUARANTEED.

TWO BLADE PENS

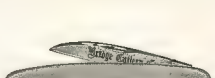
Cuts Three Quarter Size

Length 2⅝ inches; Uncapped; One Small Pen and One File Blade; Full Crocus Polished and Etched; German Silver Lining; Weight per Dozen 8 ozs.

Per Dozen
No. 2B210P—Pearl Handle.....$15.00

Length 2½ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining, Weight per Dozen 8 ozs.

Per Dozen
No. 2B253P—Pearl Handle.... $10.50



Length 3¼ inches; Uncapped; One Large Wharncliffe and One File Blade; Full Crocus Polished and Etched; Brass Lining; Milled; Weight per Dozen 14 ozs.

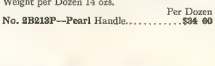
Per Dozen
No. 2B213P—Pearl Handle.....$34 00

Length 3 inches; German Silver Scored Bolsters; One Large Spear and One Small Pen Blade; Glazed; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen
No. 2B241ST—Patent Stag Handle....$11.00

Length 3 inches; Polished Steel Rat Tail Bolsters; One Large Wharncliffe and One Small Pen Blade; Glazed; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs

Per Dozen
No. 2B242ST—Patent Stag Handle....$11.00

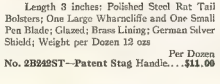


Length 3¼ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Glazed and Etched; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen
No. 2B81ST Patent Stag Handle. ..$10 50
No. 2B81E —Ebony Handle..... .. 10.00

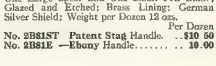
Length 3¼ inches; German Silver Tipped; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen
No. 2B106E —Ebony Handle..... .. $12 00
No. 2B106ST—Patent Stag Handle.... 16.50



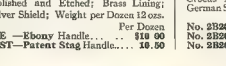
Length 3¼ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen
No. 2B203 —Cocobolo Handle.....$10 50
No. 2B203E —Ebony Handle 10 50
No. 2B203ST—Patent Stag Handle.... 11 00



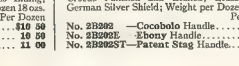
Length 3¼ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen
No. 2B202 —Cocobolo Handle.....$11 00
No. 2B202E Ebony Handle..... 11 00
No. 2B202ST—Patent Stag Handle.... 11.50



Length 3¼ inches; Uncapped; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; No Shield, Weight per Dozen 16 ozs.

Per Dozen
No. 2B98ST Patent Stag Handle. ... . $ 9 50
No. 2B98W —White Bone Handle.. .. .. 10 50
No. 2B98P —Pearl Handle.. .... 24.00



Length 3¼ inches; German Silver Tipped; One Large Spear and One Small Pen Blade; Half Crocus Polished and Etched; Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen
No. 2B193ST Patent Stag Handle.....$10 00
No. 2B193W —White Bone Handle..... 11.50
No. 2B193P —Pearl Handle..... 26.00

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*RUGBY BICYCLES

MEN'S ROAD MODEL

COMPLETE BICYCLES

	Each
No. 376 —**Regular.** No. 3 Guaranteed Equipment; No. 20 Rugby Tough Tread Single Tube Tires	$50 00
No. 2376 —No. 2 Guaranteed Equipment; No. 30 Star Single Tube Tires	46.00
No. 2X376—No. 2X Guaranteed Equipment; No. 3028 Good Service Non-Skid Single Tube Tires	48.00
No. 4376 —No. 4 Guaranteed Equipment; No. 60 Redstrong Single Tube Tires; Option, No. 20 Rugby Tough Tread or No. 70 Rugby Trouble Proof Single Tube Tires	52.00
No. 5376 —No. 5 Guaranteed Equipment, No. 80 Redstrong Clincher Tires	56.00

STRIPPED BICYCLES

Stripped Means Without Tires, Saddle, Pedals, Handle Bar or Tool Bag

	Each
No. 0376	$36 00

EXTRAS

		Each
For Coaster Brake	Add	$7.20
For Front and Rear Guards, Same as on No. 700 Model Rugby	Add	2 50

This Wheel is not only a Substantial and Serviceable Road Wheel, but has all the Lines and Beauty of a Racing Model It has been Built Throughout According to Our Own Specifications.

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls; 5-32 inch in Head; 5-16 inch in Hanger; ¼ inch in Rear Hub; 3-16 inch in Front Hub.

Chain—No. 31 Diamond, Blued and Highly Polished; 3-16 inch

Connections—Triple Plate Arch Fork Crown, Nickel Plated; Forged Seat Post; Cluster Bolt and Nut Fastening

Front Fork—Special Design, with Nickel Plated Reinforced Rib.

Crank Hanger—Genuine Rugby One-Piece; 7 inch Diamond Cranks, Highly Nickeled.

Enamel—Regular Color; Red with White Head and Seat Post Mast; Option, Four Coats Hand Polished Rugby Green, with Double Green and Red Hair Line Stripes.

Frame—20, 22 and 24 inch; One inch, Eighteen Gauge English High Carbon Seamless Tubing Throughout.

Handle Bar—No. RER Rugby Extension; No. 26R Rugby Red Rubber Grips.

Hubs—Turned from Solid Bar Stock; Tool Steel Cones and Cups.

Pedals—No. 40 Rugby.

Rims—Kundtz One-Piece Rock Elm, Enameled and Striped to Match Frame

Saddle—No. 052RC Rugby with Universal Cushion Springs.

Spokes—Rugby Non-Rust; 14-16.

Sprockets—26 Tooth Front, 9 Tooth Rear; 3-16 inch.

Tool Bag—No. 12, Contains Wrench, Oil Can and Pump.

Wheels—28 inch.

Wheel Base—43 Inches.

Weight Stripped—17 Pounds.

One in a Crate; Average Weight Crated, 50 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

*SHAPLEIGH SPECIAL BICYCLES

MEN'S ROAD MODEL

COMPLETE BICYCLES

		Each
No. 366	—**Regular.** No. 2 Guaranteed Equipment; No. 80 Star Single Tube Tires	**$39 00**
No. 1366	No. 1 **Unguaranteed** Equipment; Mound City Single Tube Tires	**36 00**
No. 2X366	No. 2X Guaranteed Equipment; No. 0 28 Good Service Non Skid Single Tube Tires	**40 00**
No. 3366	No. 3 Guaranteed Equipment, No. 20 Rugby Tough Tread Single Tube Tires	**43 00**
No. 4366	—No. 4 Guaranteed Equipment, No. 60 Redstrong Single Tube Tires, Quality, No. 20 Rugby Tough Tread or No. 70 Rugby Trouble Proof Single Tube Tires	**46 00**
No. 5366	No. 5 Guaranteed Equipment; No. 80 Redstrong Clincher Tires	**50 00**

STRIPPED BICYCLES

Stripped Means Without Tires Saddle, Pedals, Handle Bar or Tool Bag

		Each
No. 0366		**$27 50**

EXTRAS

		Each
For Coaster Brake	Add	**$7 20**
For Front and Rear Mud Guards, Same as No. 700 Rugby Model	Add	**2 50**

This Bicycle is Acknowledged to be the most Satisfactory ever Sold at the Price. It is Strictly up to Date. Only Good Material is Used in Its Construction. Dealers will Find it to be a Great Seller

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls; 5-32 inch in Head; 5-16 inch in Crank Hanger; ¼ inch in Rear Hub; 3-16 inch in Front Hub.

Chain—No. 9 Diamond; 3-16 inch.

Connections—One Piece Drop Forged Diamond Shape Fork Crown, Nickel Plated, Forged Seat Post; Cluster Bolt and Nut Fastening

Crank Hanger—Shapleigh Special, One Piece; 7 inch Round Cranks Highly Nickeled

Enamel—Four Coats Tribune Blue, with ⅛ inch Crimson Stripe; Optional, Hand Rubbed Black, with ⅛ inch Gold Stripe.

Frame—20, 22 and 24 inch, One inch, Eighteen Gauge Shelby Seamless Tubing.

Handle Bar—No. RER Rugby Extension; No. 26R Rugby Red Rubber Grips.

Hubs—Bell Shape; Tool Steel Cones, Hardened and Ground; Pressed Cups with Ball Washers Inserted.

Pedals—No. 40 Rugby

Rims—Kundtz One Piece Rock Elm Enameled to Match Frame.

Saddle—No. 0o2RC Rugby with Universal Cushion Springs.

Spokes—No. 2, 14-16 Gauge.

Sprockets—26 Tooth Front, 9 Tooth Rear, 3-16 inch.

Tool Bag—No. 12 Contains Wrench, Oil Can and Pump.

Wheels—28 inch.

Wheel Base—43 Inches.

Weight Stripped—47 Pounds.

One in a Crate; Average Weight Crated, 50 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

BICYCLE EQUIPMENT

AS FURNISHED ON BICYCLES LISTED ON THE FOLLOWING PAGES

No. 1 EQUIPMENT—UNGUARANTEED

Not Recommended on Any Machine

Tires—Mound City, Unguaranteed Single Tube.
Handle Bars—No. RA Rugby Adjustable.
Grips—No. 13 LW.

Pedals—No. BC Bridgeport.
Saddle—No 10R Rugby.
Tool Bag—No. 8; with Wrench, Oiler and Pump

No. 2 EQUIPMENT—GUARANTEED

Regular on No. 366 Shapleigh Special

Tires—No. 30 Star Single Tube.
Handle Bars—No. RER Rugby Extension.
Grips—No. 14LS.

Pedals—No. 40 Rugby.
Saddle—No. 40R Rugby.
Tool Bag—No. 12; with Wrench, Oiler and Pump.

No. 2X EQUIPMENT—GUARANTEED

Regular on No. 486 Shapleigh Special

Tires—No. 302S Good Service Non-Skid Single Tube.
Handle Bars—No. RER Rugby Extension.
Grips—No. 26R Rugby Red Rubber.

Pedals—No. 40 Rugby.
Saddle—No. 052RC Rugby, with Universal Cushion Springs.
Tool Bag—No. 12; with Wrench, Oiler and Pump.

No. 3 EQUIPMENT—GUARANTEED

Regular on No. 376 Rugby

Tires—No. 20 Rugby Tough Tread Single Tube.
Handle Bars—No. RER Rugby Extension.
Grips—No. 26R Rugby Red Rubber.

Pedals No. 40 Rugby.
Saddle—No. 052RC Rugby, with Universal Cushion Springs.
Tool Bag—No. 12; with Wrench, Oiler and Pump.

No. 4 EQUIPMENT—GUARANTEED

Regular on No. 700 Rugby

Tires—No. 60 Redstrong Single Tube; Option, No. 20 Rugby Tough Tread, No. 70 Rugby Trouble Proof.
Handle Bars—No. 4KE Kelly Extension.
Grips—No. 26R Rugby Red Rubber.

Pedals—No. 40 Rugby.
Saddle—No. 052RC Rugby, with Universal Cushion Springs.
Tool Bag—No. 12; with Wrench, Oiler and Pump.

No. 5 G. & J EQUIPMENT—GUARANTEED

Tires—No. 80 Rugby Clincher.
Handle Bars—No. 4KE Kelly Extension.
Grips—No. 26R Rugby Red Rubber.

Pedals—No. 40 Rugby.
Saddle—No. 052RC Rugby, with Universal Cushion Springs.
Tool Bag—No. 12; with Wrench, Oiler and Pump.

No. 6 JUVENILE EQUIPMENT GUARANTEED

Tires—Good Service Non-Skid Single Tube.
Handle Bars—No. JRA Rugby Juvenile Adjustable.
Grips—No. 14J.

Pedals—No. 11 Boys, No. 12 Girls.
Saddle—No. 10R Rugby.
Tool Bag—No. 8; with Wrench, Oiler and Pump.

BICYCLE GUARANTEE

We Agree with the Purchaser of Each Bicycle, to Make Good, by Repairs or Replacements, **When Delivered at Our Store, Transportation Prepaid,** any Imperfection or Defect in Material or Manufacture of Our Rugby or Shapleigh Special Bicycles **not Caused by Misuse or Neglect,** Provided that all Imperfections or Defective Parts shall be Referred to Us Before any Claim for Repair or Replacement shall be Allowed.

This Guarantee Continues in Effect to December 31st following Date of Purchase.

TIRE GUARANTEE

We Guarantee Redstrong, Rugby, Good Service Non-Skid and Star Tires to be Perfect in Workmanship and Material, and if any Defect Should Develop Within the Season in which They are Purchased of us, We Will Repair or Replace Without Charge, Provided that they are **Returned to Us, Charges Prepaid.** This Guarantee does not Cover **Punctures, or Damages Caused by Accident or Negligence** of the Rider. This Guarantee **Expires in any Event on December 31st, of the Year in Which they are Purchased.**

Factory Brand Tires are Guaranteed by the Manufacturers, and are Subject to the Same Conditions Except they must be Returned, **Charges Prepaid, Direct to the Factory That Made Them** for Their Inspection and Approval.

"DIAMOND EDGE IS A QUALITY PLEDGE"

*SHAPLEIGH SPECIAL BICYCLES

LADIES MODEL

COMPLETE BICYCLES

		Each
No. 869	**—Regular.** No. 2 Guaranteed Equipment; No. 30 Star Single Tube Tires	$42.00
No. 1369	—No. 1 **Unguaranteed** Equipment; Mound City Single Tube Tires	39.00
No. 2X369	—No. 2X Guaranteed Equipment; No. 3028 Good Service Non-Skid Single Tube Tires	43.00
No. 3369	—No. 3 Guaranteed Equipment; No. 20 Rugby Tough Tread Single Tube Tires	46.00
No. 4369	No. 4 Guaranteed Equipment; No. 60 Redstrong Single Tube Tires; Option, No. 20 Rugby Tough Tread or No. 70 Rugby Trouble Proof Single Tube Tires	49.00
No. 5369	—No. 5 Guaranteed Equipment; No. 80 Redstrong Clincher Tires	53.00

STRIPPED BICYCLES

Stripped Means Without Tires, Saddle, Pedals, Handle Bar or Tool Bag

	Each
No. 0369	$50.50

EXTRAS

	Each
For Coaster Brake	Add $7.20

Material and Workmanship of this Machine is Exactly the Same as in Our No. 366 Shapleigh Special. It is One of the Best Designed Ladies Machines on the Market.

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls, 5-32 inch in Head; 5-16 inch in Hanger; ½ inch in Rear Hub; 3-16 inch in Front Hub.
Chain—No. 9 Diamond, 3-16 inch.
Connections—One Piece Drop Forged Diamond Shape Fork Crown, Nickel Plated; Forged Seat Post, Cluster Bolt and Nut Fastening.
Crank Hanger—Shapleigh Special One Piece; 7 inch Round Crank-, Highly Nickeled.
Enamel—Four Coats Hand Rubbed Black, with ½ inch Gold Stripe.
Frame—21 inch; One inch, Eighteen Gauge Shelby Seamless Tubing.
Guards—Steel Front, Rear and Chain Guards, Enameled to Match Frame; 8 inch Leather Flap on Front Guard.
Handle Bar—No. RER Rugby Extension; No. 26R Rugby Red Rubber Grips.
Hubs—Ball Shape; Tool Steel Cones Hardened and Ground; Pressed Cups with Ball Washers Inserted.
Pedals—No. 105 Bridgeport Rubber.
Rims—Rundle, One Piece Rock Elm; Enameled to Match Frame
Saddle—No. 07C Rugby.
Spokes—No. 12, 14-16 Gauge.
Sprockets—22 Tooth Front, 9 Tooth Rear; 3-16 inch.
Tool Bag—No. 30; Contains Wrench, Oil Can and Pump.
Wheels—28 inch
Wheel Base—44 Inches.
Weight Stripped—22 Pounds.

One in a Crate; Average Weight Crated, 55 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE."

*SHAPLEIGH SPECIAL BICYCLES

MEN'S TRUSS FRAME

COMPLETE BICYCLES

	Each
No. 486 —Regular. No. 2X Guaranteed Equipment; No. 3028 Good Service Non-skid Single Tube Tires	$44 00
No. 1486—No. 1 **Unguaranteed** Equipment; Mound City Single Tube Tires.	40 00
No. 2486—No. 2 Guaranteed Equipment; No. 30 Star Single Tube Tires.....	43 00
No. 3486—No. 3 Guaranteed Equipment; No. 20 Rugby Tough Tread Single Tube Tires.. . . .	47 00
No. 4486—No. 4 Guaranteed Equipment; No. 60 Redstrong Single Tube Tires; Option, No. 20 Rugby Tough Tread or No. 70 Rugby Trouble Proof Single Tube Tires	50 00
No. 5486—No. 5 Guaranteed Equipment; No. 80 Redstrong Clincher Tires	54 00

STRIPPED BICYCLES

Stripped Means Without Tires, Saddle, Pedals, Handle Bar or Tool Bag

	Each
No. 0486	$31.00

EXTRAS

	Each
For Coaster Brake	Add $7 20
For Front and Rear Guards, Same as No. 700 Model Rugby	Add 2 50

The Shapleigh Special Reinforced Truss Frame Construction is of the Latest and Most Approved Design. The Extra Bar is Placed Where it Gives the Most Strength. Dealers will Find this an Exceptional Seller.

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls; 5-32 inch in Head; 5-16 inch in Crank Hanger; ¼ inch in Rear Hub; 3-16 inch in Front Hub.

Chain—No. 9 Diamond; 3-16 inch.

Connections—Three Piece Orient Design Fork Crown, Nickel Plated; Forged Seat Post; Cluster Bolt and Nut Fastening

Crank Hanger—Shapleigh Special One Piece; 7 inch Round Cranks; Highly Nickeled.

Enamel—Four Coats Hand Rubbed Black, with Crimson Head and Seat Post Mast, Colors Separated by Gold Hair Line

Frame—20, 22 and 24 inch; One inch, Eighteen Gauge Shelby Seamless Tubing.

Handle Bar—No. RER Rugby Extension; No. 26R Rugby Red Rubber Grips.

Hubs—Bell Shape; Tool Steel Cones, Hardened and Ground; Pressed Cups with Ball Washers Inserted.

Pedals—No. 40 Rugby.

Rims—Kundtz One Piece Rock Elm; Enameled to Match Frame.

Saddle—No. 052RC Rugby with Universal Cushion Springs.

Spokes—No. 2; 14-16 Gauge.

Sprockets—26 Tooth Front, 9 Tooth Rear; 3-16 inch.

Tool Bag—No. 12; Contains Wrench, Oil Can and Pump.

Wheels—28 inch.

Wheel Base—43 Inches.

Weight Stripped—17 Pounds.

One in a Crate; Average Weight Crated, 50 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

*RUGBY BICYCLES

GIRLS MODEL

COMPLETE BICYCLES

	Each
No. 302—20 inch Wheels; 14 inch Frame; No. 6 Guaranteed Equipment	**$35 00**
No. 304—24 inch Wheels; 16 inch Frame; No. 6 Guaranteed Equipment	**35 00**
No. 306—26 inch Wheels; 18 inch Frame; No. 6 Guaranteed Equipment	**36 00**

EXTRAS

	Each
For Coaster Brake	Add **$7 20**

Our Rugby is Undoubtedly the Best Looking Girls Juvenile Bicycle on the Market. It has Many of the Up-to-date Features of the Full Size Ladies Rugby. The Equipments—Handle Bar, Saddle, Pedals, Etc., are First-Class in every Respect. All of Which, Including the Tires, are Guaranteed Against Defective Workmanship and Material. Enameled Black with Crimson Head. Rims and Guards to Match.

SPECIFICATIONS

Bearings—Balls; 5-32 inch in Head; 5-16 inch in Hanger; ¾ inch in Rear Hub; 3-16 inch in Front Hub; Ball Cases and Cones Ground True, Properly Hardened and Dust Proof.

Chain—No. 9 Diamond; 3-16 inch.

Chain Adjusters—Drop Forged.

Connections—One Piece Drop Forged Fork Crown, Highly Nickeled, Forged Seat Post; Claster Bolt and Nut Fastening.

Crank Hanger—Rugby One Piece; 5½ inch Diamond Cranks; Highly Nickeled.

Enamel—Four Coats Hand Rubbed Black, with Crimson Head

Frame—One inch, Eighteen Gauge English High Carbon Seamless Steel Tubing.

Handle Bar—No. JRA Rugby Non-Rust Adjustable; No. 14J Grips.

Hubs—Bell Shape; Tool Steel Cones, Hardened and Ground; Pressed Cups with Ball Washers Inserted.

Pedals—No. 12 Bridgeport Rubber.

Rims—Kandtz One Piece Rock Elm; Enameled to Match Frame.

Saddle—No. 10R Rugby.

Seat Post—"L" Pattern with Expander.

Spokes—No. 2; 14-16.

Sprockets—20 Tooth Front, 8 Tooth Rear; 3-16 inch.

Tires—Good Service Non-Skid Single Tube.

Tool Bag—No. 8; Contains Wrench, Oil Can and Pump.

Wheel Base—No. 302, 35½ Inches, No. 304, 37½ Inches; No. 306, 39½ Inches.

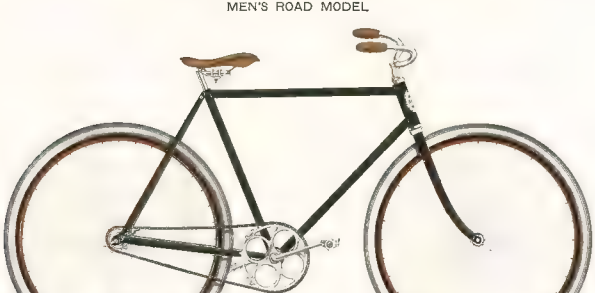
Weight Stripped—No. 302, 17 Pounds; No. 304, 17½ Pounds; No. 306, 18 Pounds.

One in a Crate; Average Weight Crated, 43 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

*WONDER BICYCLES

MEN'S ROAD MODEL



COMPLETE BICYCLES

Equipped With No. 3D Corbin Duplex Coaster Brake

		Each
No. 1910	**—Regular.** Special Guaranteed Equipment, No. 39 Star Single Tube Tires	$39 00
No. 11910	—No. 1 **Unguaranteed** Equipment; Manual City Single Tube Tires	37 00
No. 2X1910	—No. 2X Guaranteed Equipment; No. 3128 Good Service Non-Skid Tires	42 00
No. 31910	—No. 3 Guaranteed Equipment; No. 29 Rugby Tough Tread Single Tube Tires	45 00
No. 41910	—No. 4 Guaranteed Equipment, No. 69 Red-strong Saxon Tube Tires; Option No. 2 Right Tough Tread or No. 70 Rugby Triple Proof Single Tube Tires	47.00
No. 51910	—No. 5 Guaranteed Equipment; No. 80 Rugby Clincher Tires	50.00

STRIPPED BICYCLES

Equipped With No. 3D Corbin Duplex Coaster Brake

Stripped Means Without Tires, Saddle, Pedals, Handle Bar or Tool Bag

		Each
No. 01910		$30 00

EXTRAS

	Each
For Front and Rear Mud Guards, Same as on No. 700 Rugby Model	Add $2.50
Without Coaster Brake	Deduct 3.00 Net

This is Made to Meet the Demand for a Low Priced Bicycle of Quality

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls; 5/32 Inch in Head; 3/16 inch in Crank Hanger; 1/4 Inch in Rear Hub; 3/16 inch in Front Hub.
Chain—No. 9 Diamond; 3/16 inch.
Connections—Flat Drop Forged Nickel Plated Fork Crown; Drop Forged Seat Post; Cluster Bolt and Nut Fastening.
Crank Hanger—One Piece Drop Forged; 7 inch Rout. 1 Cranks.
Enamel—Maroon, Option, Hand Polished Black.
Frame 20, 22 and 24 Inch, One Inch, Seamless Tubing.
Handle Bar—No. RA Rugby Non-Rust Adjustable.
Hubs—Front Hub, Bell Shape; Tool Steel Cones Hardened and Ground; Caps Pressed, with Bad Washers Inserted.
Coaster Brake—No. 3D Corbin Duplex.
Pedals No. BC Bridgeport New Standard.
Rims—Kundtz One Piece, Enameled to Match Frame.
Saddle No. 10R Rugby.
Spokes—No. 2; 14-10
Sprockets 26 Tooth Front; 9 Tooth Rear; 3/16 inch.
Tool Bag No. 8; Contains Wrench, Oil Can and Pump.
Wheels 28 in.
Wheel Base 53 Inches.
Weight Stripped 17 Pounds.

One in a Crate; Average Weight Crated, 50 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

*RUGBY BICYCLES

BOYS MODEL

COMPLETE BICYCLES

	Each
No. 301—20 inch Wheels; 14 inch Frame; No. 6 Guaranteed Equipment	$34 00
No. 303—24 inch Wheels; 16 inch Frame; No 6 Guaranteed Equipment	34 00
No. 305—26 inch Wheels, 18 inch Frame, No 6 Guaranteed Equipment	35 00

EXTRAS

	Each
For Coaster Brake . . . . . Add	$7.20

Our Rugby Juvenile Bicycles are made with the Same High Grade Material and the Same Care as the Rugby Adult Models. They are Built Strong and Serviceable. No Pains or Expense Has Been Spared to make them the Best on the Market

SPECIFICATIONS

Bearings—Balls, 5-32 inch in Head, 5-16 inch in Hanger; ¼ inch in Rear Hub, 3-16 inch in Front Hub; Ball Cases and Cones Ground True, Properly Hardened and Dust Proof.

Chain—No. 9 Diamond, 3-16 inch.

Chain Adjusters—Drop Forged.

Connections—One Piece Drop Forged Fork Crown, Highly Nickeled, Forged Seat Post; Cluster Bolt and Nut Fastening

Crank Hanger—Rugby One Piece; 5¼ inch Diamond Cranks; Highly Nickeled.

Enamel—Four Coats Hand Rubbed Black, with Crimson Head.

Frame—One inch, Eighteen Gauge English High Carbon Seamless Steel Tubing.

Handle Bar—No. JRA Rugby Non-Rust Adjustable; No. 14J Grips.

Hubs—Bell Shape, Tool Steel Cones, Hardened and Ground; Pressed Cups with Ball Washers Inserted.

Pedals—No. 11 Bridgeport.

Rims—Kundtz One Piece Rock Elm, Enameled to Match Frame.

Saddle—No. 10R Rugby

Seat Post—"L" Pattern with Expander.

Spokes—No. 2 14-16.

Sprockets—20 Tooth Front, 8 Tooth Rear; 3-16 inch.

Tires—Good Servire Non-Skid Single Tube.

Tool Bag No. 8; Contains Wrench, Oil Can and Pump.

Wheel Base—No. 301, 33½ Inches; No. 303, 37½ Inches; No. 305, 39½ Inches

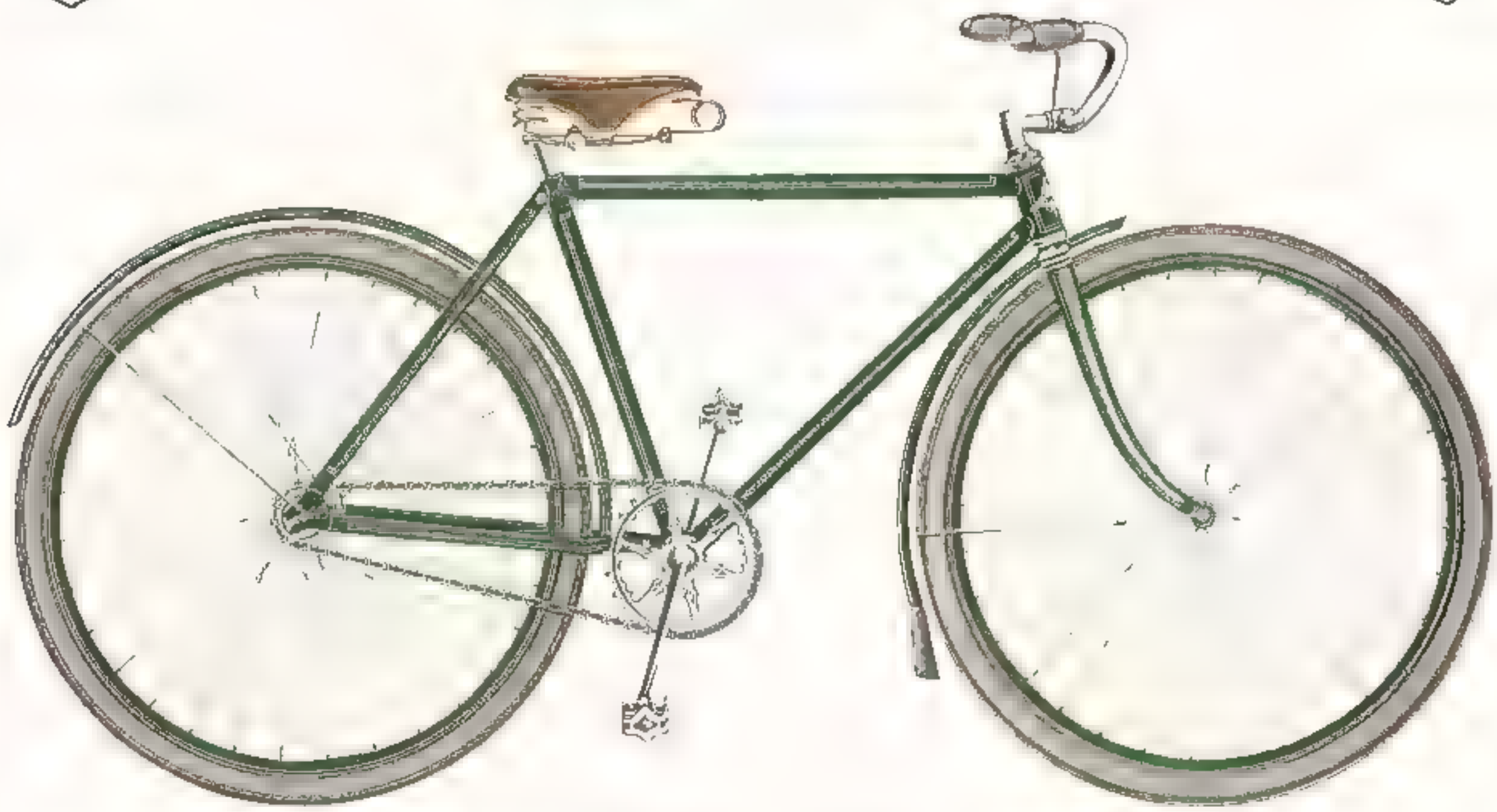
Weight Stripped—No. 301, 17 Pounds; No. 303, 17½ Pounds; No. 305, 18 Pounds.

One in a Crate; Average Weight Crated, 43 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

*RUGBY BICYCLES

MEN'S SERVICE MODEL



COMPLETE BICYCLES

Equipped with No. 3D Corbin Duplex Coaster Brake and Steel Mud Guards

		Each
No. 700	—**Regular.** No. 4 Guaranteed Equipment; No. 60 Redstrong Single Tube Tires; Option, No. 20 Rugby Tough Tread or No. 70 Rugby Trouble Proof, Single Tube Tires	**$60 00**
No. 2700	—No. 2 Guaranteed Equipment; No. 30 Star Single Tube Tires	**54 00**
No. 2X700	—No. 2X Guaranteed Equipment; No. 3028 Good Service Non-Skid Single Tube Tires	**56 00**
No. 3700	—No. 3 Guaranteed Equipment; No. 20 Rugby Tough Tread Single Tube Tires	**58 00**
No. 5700	—No. 5 Guaranteed Equipment; No. 80 Redstrong Clincher Tires	**64 00**

STRIPPED BICYCLES

Equipped with No. 3D Corbin Duplex Coaster Brake and Steel Mud Guards

Stripped Means Without Tires, Saddle, Pedals, Handle Bar or Tool Bag

		Each
No. 0700		**$44 00**

Our Model 700 Rugby is Undoubtedly the Most Sensible and Practical Bicycle on the Market, as it can be Ridden Every Day in the Year, Regardless of Weather Conditions. The Lines are Symmetrical; Material Throughout is the very Best Seamless Tubing, Forged Connections, Rugby Hangers, Corbin Front Hub and Coaster Brake, No. 31 Indianapolis Chain, Motor Cycle Mud Guards, with Eight inch Leather Flap on Front, Constructed so they will not Work Loose or Rattle. The Equipment is the Highest Grade, Redstrong Tires, Option Rugby Tough Tread or Trouble Proof on Regular Model; Kelly Handle Bar; Big Easy Spring Saddle; Rugby Concave Hub Pedals. This Machine will be Greatly Appreciated by Practical Riders.

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls; 5-32 inch in Head; 5-16 inch in Hanger; ¼ inch in Rear Hub; 3-16 inch in Front Hub.

Chain—No. 31 Indianapolis, Blued and Highly Polished; 3-16 inch.

Connections—Triple Plate Arch Fork Crown, Nickel Plated; Forged Seat Post; Cluster Bolt and Nut Fastening

Front Fork—Special Design with Nickel Plated Reinforced Rib

Crank Hanger—Genuine Rugby One-Piece; 7 inch Diamond Cranks, Highly Nickeled.

Enamel Four Coats, Hand Polished, Rugby Green, with Double Green and Red Hair Line Stripes.

Frame—20, 22 and 24 inch. One inch, Eighteen Gauge English High Carbon Seamless Tubing Throughout.

Guards—Motor Cycle Style, Front and Rear; 8 inch Leather Flap on Front Guard; Enameled to Match Frame; Will not Rattle or Work Loose.

Handle Bar—No. 4KE Kelly Extension; No. 26R Rugby Red Rubber Grips.

Hubs—Corbin Front; Corbin Duplex Coaster Brake Rear; Turned from Solid Bar Stock; Tool Steel Cones and Cups.

Pedals—No. 40 Rugby.

Rims—Steel with Rolled Edge, Enameled and Striped to Match Frame.

Saddle—No. 052RC Rugby, with Universal Cushion Springs.

Spokes—Rugby Non-Rust; 14-16.

Sprockets—26 Tooth Front, 9 Tooth Rear; 3-16 inch.

Tool Bag—No. 12; Contains Spanner, Wrench, Oil Can and Pump.

Wheels—28 inch.

Wheel Base—43 Inches.

Weight Stripped 23 Pounds.

One in a Crate, Average Weight Crated, 58 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

*RUGBY BICYCLES

LADIES MODEL

COMPLETE BICYCLES

		Each
No. 379	—**Regular.** No. 3 Guaranteed Equipment; No. 20 Rugby Tough Tread Single Tube Tires	$52 00
No. 2379	—No. 2 Guaranteed Equipment, No. 30 Star Single Tube Tires	48 00
No. 2X379	—No. 2X Guaranteed Equipment; No. 3028 Good Service Non-Skid Single Tube Tires	49.00
No. 4379	—No. 4 Guaranteed Equipment; No. 60 Redstrong Single Tube Tires; Option, No. 20 Rugby Tough Tread or No. 70 Rugby Trouble Proof Single Tube Tires	54.00
No. 5379	—No. 5 Guaranteed Equipment, No. 80 Redstrong Clincher Tires	58 00

STRIPPED BICYCLES

Stripped Means Without Tires, Saddle, Pedals, Handle Bar or Tool Bag

	Each
No. 0379	$38 00

EXTRAS

	Each
For Coaster Brake	Add $7 20

In this Wheel We have Combined every Excellence that can Enter Into the Building of a Ladies Bicycle, and We Feel Confident that Our No. 379 Series Rugby is Unsurpassed. The Frame is Especially Designed to Give the Highest Possible Rigidity, and at the Same Time Retain the Easy Running Qualities.

SPECIFICATIONS ON REGULAR MODEL

Bearings—Balls; 5-32 inch in Head, 5-16 inch in Hanger, ¼ inch in Rear Hub; 3-16 inch in Front Hub

Chain—No. 31 Diamond, Blued and Highly Polished, 3-16 inch

Connections—Triple Plate Arch Fork Crown, Nickel Plated; Forged Seat Post; Cluster Bolt and Nut Fastening

Front Fork—Special Design with Reinforced Nickel Plated Rib

Crank Hanger—Genuine Rugby One Piece; 6½ inch Diamond Cranks, Highly Nickeled.

Enameled—Four Coats Hand Polished Rugby Green with Double Green and Red Hair Line Stripes

Frame—22 inch; One inch, Eighteen Gauge English High Carbon Seamless Tubing Throughout

Guards—Steel Front, Rear and Chain Guards; 8 inch Leather Flap on Front Guard; Are Light and Graceful, can be Easily Detached, Being Fastened to the Frame by an Ingenious Device, they Cannot Work Loose.

Handle Bar—No. 21K Rugby Extension; No. 20R Rugby Red Rubber Grips.

Hubs—Turned from Solid Bar Stock; Tool Steel Cones and Cups.

Pedals—No. 56C Bridgeport

Rims—Kundtz One-Piece Rock Elm, Enameled and Striped to Match Frame.

Saddle—No. 07XC Rugby

Spokes—Rugby Non-Rust, 14-16.

Sprockets—26 Tooth Front, 9 Tooth Rear; 3-16 inch.

Tool Bag—No. 3, Contains Wrench, Oil Can and Pump

Wheels—28 inch

Wheel Base—44 Inches.

Weight Stripped—22 Pounds.

One in a Crate; Average Weight Crated, 55 Pounds

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Small Park Size Folding

*NEW IDEA

Body—Back and Seat Padded.
Gear—All Steel; Maple Cross Handle.
Wheels—10 inch, ⅜ **inch Rubber Tires.**
Seat—Width 11¾ inches; Depth 9¾ inches.
Strap—Embossed, Russet Oak Leather.

Each

No. 306—Without Parasol, Weight Each 30 lbs. . . . **$7.20**

One in a Crate

*ALEXANDRIA

Body—Reed Back; Wood Seat.
Gear—All Steel, Enameled Green; Cross Handles, Stained and Varnished.
Wheels—10 inch, Enameled Green; ⅜ **inch Rubber Tires.**

Each

No. 304—Without Parasol; Weight Each 35 lbs. **$8.00**

*LITTLE DEVIL

Body—Perforated Back; Wood Seat and Foot Rest.
Gear—All Steel, Enameled Green; Maple Cross Handle.
Wheels—10 inch, Enameled Green; ⅜ **inch Rubber Tires.**
Seat—Width 11¾ inches, Depth 9¾ inches.
Strap—Embossed, Russet Oak Leather.

Each

No. 102—Without Parasol; Weight Each 30 lbs. **$5.50**

One in a Crate

*BUSTER

Body—Stationary Back; Wood Seat.
Gear—All Steel, Enameled Green; Cross Handle, Stained and Varnished
Wheels—8 inch, Enameled Green; ⅜ **inch Rubber Tires.**
Seat—Width 11 inches, Depth 8½ inches.
Strap—Embossed, Russet Oak Leather.

Each

No. 303—Reed Back **$4.20**
No. 101 –Leatheroid Back; Weight Each 12 lbs. **3.30**

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

BABY CARRIAGES

*DIAMOND BRAND

*NORSHAP

Body—Varnished German Reed Work, Highly Finished in Natural Color; Closely Woven with Large Cushion Roll Edge.

Gear—Enameled Green; Tubular Steel Pusher; Sectional Wood Handle, Enameled White with Nickel Plated Ferrules; Nutless Axles with Anti-Friction Wheel Fastener and Rubber Hub Caps; Front and Rear Springs; Brake Operated from Rear.

Wheels—16 inch, Enameled Green; ⅜ **inch Rubber Tires.**

Strap—Embossed, Russet Oak Leather.

Upholstering—Corduroy; Green, Brown or Drab.

Parasol—Standard Sateen, One Deep Ruffle; Green, Brown or Drab: Complete with Rod, Clamp and Ball.

Seat—Padded; Corduroy Upholstered, Width 12½ inches, Depth 11¾ inches.

Each

No. 733—Complete with Parasol; Weight Each 60 lbs. **$41.00**

*JOHN BROWN

Body—Varnished German Reed Work, Highly Finished in Natural Color; Closely Woven Sides and Back with Fancy Open Work at Top of Dash; Cushion Roll Edge.

Gear—Enameled Green; Solid Steel Pusher; Solid Cross Handle, Stained and Varnished; Nutless Axles with Anti-Friction Wheel Fastener and Rubber Hub Caps; Front and Rear Springs; Brake Operated from Rear.

Wheels—16 inch, Enameled Green; ⅜ **inch Rubber Tires.**

Strap—Embossed, Russet Oak Leather.

Upholstering—Rep; Green, Brown, Drab or Blue.

Parasol—Standard Sateen; One Deep Ruffle; Green, Brown or Blue; Complete with Rod, Clamp and Ball.

Seat—Padded; Rep Upholstered; Width 12½ inches. Depth 11¾ inches.

Each

No. 736—Complete with Parasol; Weight Each 55 lbs **$20 50**

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Small Size Folding

Large Size Folding

*VICTORIA

Body—Varnished Reed Work, Highly Finished, Natural Color; Elaborate Sides, Closely Woven Dash.

Gear—Solid Steel Pusher with Sectional Wood Cross Handle, Enameled White with Nickel Plated Ferrules; Front and Rear Springs; Nutless Axles with Favorite Anti-Friction Wheel Fastener; Foot Brake; Enameled Green.

Wheels—10 inch, Enameled Green; **⅝ inch Rubber Tires.**

Seat—Three Ply Veneer, Hard Maple Top; Width 11¾ inches, Depth 9½ inches.

Parasol—Brussels Net, One Deep Ruffle and Rosette, Double Lining, White and Green Silesia.

Each

No. 504P—Complete with Parasol..... **$24.00**

No. 504 —Without Parasol..... **20.50**

Weight Each 45 lbs

*FAIRY QUEEN

Body—Varnished Reed Work, Highly Finished, Natural Color; Adjustable Back and Dash; Special Design Side and Dash Close Woven and Spindle Work.

Gear—Solid Steel Pusher; Polished Cross Handle; Front and Rear Springs; Nutless Axles with Rubber Buffers; Enameled Green.

Wheels—14 inch, Enameled Green; **25-64 inch Rubber Tires.**

Upholstering—Rep; Sides, Seat and Back Furnished in Green, Brown or Blue.

Seat—Padded; Rep; Upholstered; Width 11¾ inches, Depth 9½ inches.

Parasol—Brussels Net, One Deep Ruffle and Rosette, Double Lining, White and Green Silesia.

Each

No. 601—Complete with Parasol..... **$18.00**

Weight Each 40 lbs.

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Large Size Reclining (Not Folding)

*BABY BUNTING

Body—Varnished Reed Work, Highly Finished, Natural Color; Reclining Back with Dash; Non-Folding; Ornamental Sides with Large Cushion Roll Edge.

Gear—Full English Strap Gearing, with Brake; Tubular Steel Pusher; Sectional Enameled Cross Handle with Nickel Plated Mountings Finished in Green Enamel; Nutless Axles.

Wheels—14 inch, Enameled Green, Fitted with ⅝ **inch Rubber Tires.**

Straps—Fine Buff Leather.

Upholstering—Corduroy, Sides, Seat, Back and Dash in either Color: Green, Brown or Drab.

Parasol—Lace Covered, over White Silesia with Green Silesia Lining.

Seat—Padded; Corduroy Upholstered; Width 14 inches, Depth 10¼ inches.

Each

No. 606—Complete with Parasol; Weight Each 48 lbs. **$38.00**

*KING ARTHUR

Body—Varnished Reed Work, Highly Finished Natural Color; Reclining Back with Dash; Non-Folding; Ornamented Sides with Cushion Roll Edge.

Gear—With Brake; Tubular Steel Pusher with Braces at Body; Polished Cross Handle; Nutless Axles; Finished in Green Enamel.

Wheels—14 inch, Enameled Green, Fitted with ⅝ **inch Rubber Tires.**

Straps—Buff Leather.

Upholstering—Corduroy, Sides, Seat, Back and Dash in Colors: Green, Brown or Drab.

Parasol—Lace Covered, over White Silesia, with Green Silesia Lining.

Seat—Padded; Corduroy Upholstered; Width 14 inches, Depth 10¼ inches.

Each

No. 605—Complete with Parasol; Weight Each 45 lbs. **$30.00**

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

★DIAMOND BRAND

★PRINCESS

Large Size, Reclining (Not Folding)

Body—Varnished Reed Work, Highly Finished, Natural Color.

Gear—No. 604—Diamond; Tubular Steel Frame and Pusher, Finished in Enamel.

Nos. 602 and 600—Solid Steel Frame and Pusher; Nutless Axle;

All Gears Finished in Green Enamel.

Wheels—14 inch, with Rubber Tires; Finished in Green Enamel.

Upholstering—No. 600—Rep; Sides, Seat, Back and Dash; Assorted Colors, Green, Brown or Blue.

Nos. 604 and 602—Tapestry Sides, Seat, Back and Dash, either Green, Brown or Drab.

Parasol—Brussels Net; One Deep Ruffle and Rosette, Double Lining, White and Green Silesia.

Seat—Padded; Upholstered; Width 15¾ inches, Depth 12½ inches.

Each

No. 604—Complete with Parasol; Enameled Cross Handle; ⅞ inch **Rubber Tires**; Weight each 45 lbs . . **$29 00**

★JULIUS CAESAR

Each

No. 602—Complete with Parasol; **26-64 inch Rubber Tires**; Weight each 45 lbs. **$21.50**

One in a Crate

★DAISY

Each

No. **600**—Complete with Parasol; **⅞ inch Rubber Tires**; Weight each 45 lbs. **$15.50**

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Small Park Size Folding

Body—Varnished Reed Work, Highly Finished in Natural Color.
Gear—Solid Steel; Independent Back and Dash Fixtures; Patented Foot Brake.
Wheels—10 inch; ⅝ inch Rubber Tires, Wheels and Gear Enameled Green.
Seats—Three Ply Veneer, with Hard Maple Top; Width 11¼ inches, Depth 9½ inches.
Parasol—Brussels Net Ruffle and Rosette; Double Lining, White and Green Silesia.

*CUPID	Each
No. 25CP—Complete with Parasol and Cushions	$15.00
No. 25C —Without Parasol; With Cushions	13.00

Weight Each 40 lbs.

*CUPID	Each
No. 20CP—Complete with Parasol	$14.00
No. 20C —Without Parasol	12.00

Weight Each 42 lbs.

One in a Crate

*CUPID	Each
No. 15CP—Complete with Parasol	$12.50
No. 15C —Without Parasol	11.00

Weight Each 42 lbs.

*CUPID	Each
No. 10CP—Complete with Parasol	$11.50
No. 10C —Without Parasol	9.50

Weight Each 40 lbs.

One in a Crate

GO-CARTS

COLLAPSIBLE

★BEAUTY

Body and Hood—Best Grade Leatherette, Supported on New Idea Sensitive Springs; Assorted Colors, Black, Green and Brown.

Wheels—Steel, 10 inches, Tinned; **⅝ inch Rubber Tires;** Electrically Welded Spokes; Double Wheel Forks and Braces.

Pusher—Bicycle Steel Tubing, Nickel Plated Hand Parts.

Back and Foot Rest—Adjustable.

Seat—Width 11 inches; Depth 10 inches.

Each

No. 720—Complete with Hood; Nickel Trimmed; Weight Each 23 lbs..... **$13 00**

★WONMO

Operates with a Single Motion

Body and Hood—Best Grade **Leatherette,** Supported on Heavy **Flat Steel Frame;** Flat Steel Springs Under Rear; Assorted Colors, Black, Green and Brown.

Wheels—Steel, 10 inches, Japanned; **⅝ inch Rubber Tires;** Nickel Trimmed Steel Wheel Forks and Sides.

Pusher—Steel Tubing; Nickel Plated Hand Parts.

Back and Foot Rest—Adjustable.

Seat—Padded; Width 11 inches; Depth 9 inches.

Each

No. 710—Complete with Hood; Nickel Trimmed; Weight Each 23 lbs..... **$18 00**

One in a Crate

DOLL CARTS

COLLAPSIBLE

★DOLLY

Opens and Closes in Three Motions. Well Made, Finely Finished

Per Dozen

No. 310—Sides, Seat, Back and Dash, High Grade Leatherette in Assorted Colors, Red, Green and Black; Length, Body 20 inches, Width 12 inches; Three Substantial Wire Braces Form Support for Seat and Prevent Wheels from Falling Under the Body, **Reclining Back;** Wheels are 7½ inches in Diameter and have 12 Wire Spokes; Handles are 12 inches Wide and 18 inches Long and are Attached to and Supported from Frame by Heavy Corner Irons. All Metal Parts, Finished in Black Enamel; Weight per Dozen 60 lbs..... **$21 50**

Quarter Dozen, Assorted Three Colors, in a Crate

We Do Not Break Crates

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Small Park Size Folding

Body—Hardwood, Dark Coach Finishes as Listed, Edged with Black and Double White Lines. **Gear**—All Steel, Independent Back and Dash Fixtures
Wheels—Front and Rear the same Size, with ⅝ **Inch Rubber Tires**

Each

No. 405—Green Body; Green Imitation Leather Hood with Brass Plated Joints; 12 inch Wheels; Width of Seat 12½ inches; Depth 10 inches; Weight Each 45 lbs. **$24.00**

One in a Crate

Each

No. 402—Green Body; Green Imitation Leather Hood with Brass Plated Joints; 10 inch Wheels; Width of Seat 12½ inches; Depth 10 inches, Weight Each 45 lbs..... **$14.50**

Each

No. 401—Blue Body; 10 inch Wheels; Width of Seat 12 inches, Depth 10 inches; Weight Each 40 lbs..... **$9.00**

One in a Crate

Each

No. 400—Maroon Body; 10 inch Wheels; Width of Seat 12 inches, Depth 10 inches; Weight Each 40 lbs..... **$8.50**

GO-CARTS

*DIAMOND BRAND

Small Size Park Folding

*TOMMY ATKINS

Body—Varnished Reed Work, Highly Finished, Natural Color Sides; Back and Dash Closely Woven.

Gear—Enameled Green; Solid Steel Pusher, with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrules; Front and Rear Springs; Nutless Axles with Patent Anti-Friction Wheel Fasteners; Patent Foot Brake.

Wheels—10 inch, Enameled Green; ⅝ **inch Rubber Tires.**

Strap—Embossed, Russet Oak Leather.

Seat—Close Woven Reed Work; Width 12½ inches, Depth 12 inches.

Hood—Special Quality Imitation Leather; Color Black; 18 inches High, 13 inches Wide.

Each

No. 507—Complete with Hood; Weight Each 50 lbs.....**$21 50**

*SLEEPING BEAUTY

Body—Varnished Reed Work, Highly Finished, Natural Color; High Pattern Sides with Upholstered Edge; Reclining Back and Dash with Independent Action

Gear—All Steel, Enameled Green; Solid Steel Pusher, with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule in Center; Front and Rear Springs; Nutless Axles with Patent Anti-Friction Wheel Fasteners; Patent Foot Brake.

Wheels—10 inch, Enameled Green; ⅝ **inch Rubber Tires.**

Strap—Embossed, Russet Oak Leather.

Seat—Three Ply Veneer, Hard Maple Top; Width 12¼ inches, Depth 12¾ inches.

Each

No. 508—Without Parasol; Weight Each 45 lbs.....**$23.00**

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

★DIAMOND BRAND

Small Park Size, Folding

★QUEEN'S DAUGHTER

Body—Varnished Reed Work, Highly Finished, Natural Color; Reclining Back and Dash; Closely Woven, Ornamental Sides with Large Cushion Roll Edge.

Gear—Enameled Green; Solid Steel Pusher, with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule; Front and Rear Springs; Nutless Axles, with Favorite Patent Anti-Friction Wheel Fasteners; Patent Foot Brake.

Wheels—10 inch, 3½ **inch Rubber Tires;** Enameled Green.

Strap—Russet Oak Leather.

Seat—Close Woven Reed; Width 11 inches, Depth 9½ inches.

Upholstering—Rep, Either Color: Green, Blue, Brown or Drab.

Parasol—Brussels Net, One Deep Ruffle and Rosette, Double Lining White and Green Silesia.

	Each
No. 500P—Complete with Parasol	**$21.50**
No. 500 —Without Parasol	**18.00**

Weight Each 40 lbs.

★DOLLY VARDEN

Body—Varnished Reed Work, Highly Finished, Natural Color; Reclining Back and Dash; Closely Woven; Ornamental Sides with Large Cushion Roll Edge.

Gear—Enameled Green; Solid Steel Pusher, with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule; Front and Rear Springs; Nutless Axles, with Favorite Patent Anti-Friction Wheel Fasteners; Patent Foot Brake.

Wheels—10 inch, 3½ **inch Rubber Tires;** Enameled Green.

Strap—Russet Oak Leather.

Seat—Close Woven Reed; Width 11 inches, Depth 9½ inches.

Upholstering—Rep, Either Color: Green, Blue, Brown or Drab.

Parasol—Brussels Net, One Deep Ruffle and Rosette, Double Lining White and Green Silesia.

	Each
No. 503P—Complete with Parasol	**$23.00**
No. 503 —Without Parasol	**20.50**

Weight Each 40 lbs.

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

★DIAMOND BRAND

Small Park Size Folding

★ROOSEVELT—FOR TWINS

Body—Varnished Reed Work, Highly Finished, Natural Color; Closely Woven Sides, Back and Dash with Cushion Edge on Sides. Independent Back and Dash Action.

Gear—All Steel, Enameled Green; Solid Steel Pusher with Sectional Maple Cross Handle, Polished and Varnished, Nickel Plated Ferrules; Rear Springs; Nutless Axles with Favorite Patent Anti-Friction Wheel Fasteners; Patent Foot Brake.

Wheels—10 inch, Enameled Green; ⅝ **inch Rubber Tires.**

Strap—Embossed, Russet Oak Leather.

Seat—Three Ply Veneer; Hard Maple Top; Width 17¼ in., Depth 10¼ in.

Each

No. 510—Without Parasol; Weight Each 52 lbs. **$15.50**

★MARY ANN

Body—Varnished Reed Work and Three Ply Veneer; Hard Maple Top, Natural Color.
Gear—All Steel; Maple Cross Handles, Nickeled Ferrules.
Wheels—10 inch; ⅝ **inch Rubber Tires.**
Straps—Embossed, Russet Oak Leather.
Seat—Width 11¾ in., Depth 9¼ in.

Each

No. 307—Without Parasol. **$8.50**

Weight Each 35 lbs.

★LADY JANE

Body—Varnished Reed Work, Natural Color; Wood Back, Seat and Dash
Gear—All Steel; Maple Cross Handles, Nickeled Ferrules.
Wheels 10 inch; ⅝ **inch Rubber Tires.**
Strap—Embossed, Russet Oak Leather.
Seat—Width 11¾ in , Depth 9¼ in.

Each

No. 305—Without Parasol **$7.00**

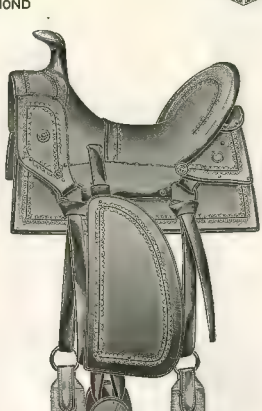
Weight Each 35 lbs.

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

STOCK SADDLES

*NORLEIGH DIAMOND



*MUSTANG

	Each
No. 19—Double Rig; Weight about 14 lbs.	**$22.00**

SPECIFICATIONS

Leather—Heavy Selected Saddle Stock; Russet Color; Hand Stamped Decorations and Border.
Tree—Bevel; 14 inch Seat; Steel Fork.
Horn—Steel; Covered, with Leather Cap.
Skirts—20 inches Long, 11 inches Deep; Russet Tanned Leather; Felt Lined; Hand Stamped Decorations and Border.
Cantle—Straight and Full; Leather Bound.
Seat—Texas Half Style; Broad and Well Shaped; Independent Jockeys, Tacked to Tree.
Double Rig—Solid Strap; Front 1¾ inches Wide; Back 1¼ inches Wide; Back Rigging Running Over Saddle Back of Cantle in One Piece.
Stirrup Leathers—1¾ inches Wide; Hand Stamped Border
Fenders—7 inches Wide; 13 inches Long, Hand Stamped Decorations and Border.
Long Latigoes—1 inch Wide
Short Latigoes—1 inch Wide.
Girth—Corded Web with Leather Loops and 2½ inch Japanned Steel Rings.
Stirrups—4 inch Solid Bent Wood; Plain, not Covered
Tie Strings—Oiled Lace Leather.
Rings Steel, Russet Enameled.
Rosettes—Leather.

*TRIUMPH

	Each
No. 131—Double Rig; Weight about 13 lbs.	**$18 50**

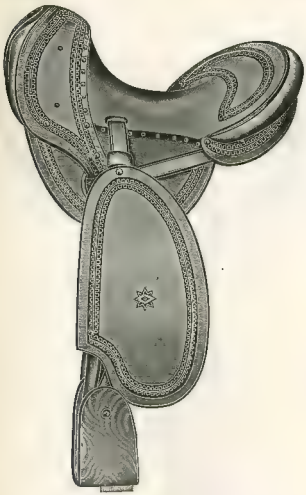
SPECIFICATIONS

Leather—Heavy Selected Saddle Stock; Russet Color; Hand Stamped Decorations and Border.
Tree—Jefferson; 13½ inch Seat; Steel Fork; Felt Covered.
Horn—Steel; Covered with Leather Cap.
Skirts—19 inches Long, 11 inches Deep; Russet Tanned Leather; Unlined; Hand Stamped Decorations and Border.
Cantle—Straight and Full; Leather Bound.
Seat—Solid, Broad, Well Shaped and Comfortable; No Jockeys.
Double Rig—Front Rig attached to Forepiece; Back 1¼ inches Wide; Back Rigging Running over Saddle Back of Cantle in One Piece.
Stirrup Leathers—1¼ inch Wide; Plain Strap Looped to Rigging.
Fenders—7 inches Wide; 13 inches Long; Hand Stamped Decorations and Border.
Long Latigoes—1 inch Wide.
Short Latigoes—1 inch Wide.
Girth—Cotton Web No. 4, with Leather Loops and Japanned Steel Rings.
Stirrups—4 inch Solid Bent Wood; Plain, not Covered.
Tie Strings—Oiled Lace Leather.
Rings—Steel, Russet Enameled.
Studs—XC Plated Tin.

Loose

SOUTHERN RIDING SADDLES

*NORLEIGH DIAMOND



FERGUSON SPECIAL

Each

No. 30—Single Rig; Weight about 12 lbs $15.00

SPECIFICATIONS

Leather—Heavy Selected Saddle Stock; Russet Color.

Tree—Ferguson; 13½ inch Seat.

Skirts—11 inches Deep from Center of Seat; 11½ inches Long, Russet Tanned Leather; Hand Stamped Border.

Cantle—Roll; Broad, Full and Well Sloped.

Seat Solid; Broad, Smooth and Comfortable.

Single Rig—Front Rigging Solid and Stitched to Skirt; Back Rigging Running over Saddle Back of Cantle in Two Pieces and Stitched to Skirt.

Stirrup Leathers—1¼ inches Wide.

Girth Corded Web; with Leather Chafes and Japanned Steel Rings.

Fenders—7 inches Wide; 14¾ inches Long; Hand Stamped Border and Decoration.

Long Latigoes—1 inch Wide.

Short Latigoes—1 inch Wide.

Stirrups—4 inches Solid Bent Wood.

Bars Leather Covered.

Housing—Creased Edge; Nickel Plated Studs, ¾ inch Japanned Steel Coat Rings.

Rings—Steel, Black Japanned.

QUILTED FERGUSON

Each

No. 0214—Single Rig; Weight about 14 lbs $25.00

SPECIFICATIONS

Leather—Heavy Selected Russet Skirts and Fenders; Light Tan Color Calf Skin Seat.

Tree—Ferguson; 14 inch Seat.

Skirts—11 inches Deep from Center of Seat; 20 inches Long; Russet Tanned Leather; Hand Stamped Border; Full Leather Underskirt Pad.

Cantle—Roll; Broad and Full; Padded and Quilted.

Seat—Solid; Soft Light Tan Calf Skin, Hand Quilted and Stuffed.

Single Rig—To Tie; 1¼ inch Solid Leather Straps, Back Rig in Two Pieces Running over Saddle Back of Cantle; Fort Ring in One Piece Running over Fork.

Stirrup Leathers—1½ inches Wide.

Girth—Corded Web; with Leather Loops and Japanned Steel Rings

Fenders—9¼ inches Wide; 16 inches Long; Creased Border.

Long Latigoes—1 inch Wide.

Short Latigoes—1 inch Wide.

Stirrups—4 inch Solid Bent Wood.

Bars—Full Leather Lined.

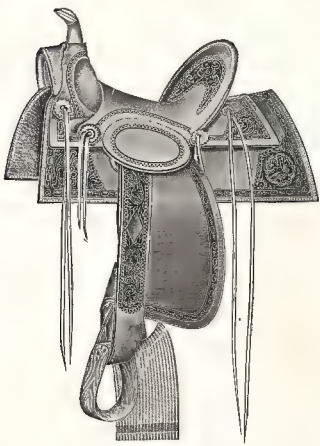
Housing Creased Edge; Stamped Border; Nickel Plated Studs; ¾ inch Nickel Plated Coat Strap Rings; Housing and Underskirt in One Piece

Rings—Steel, Black Japanned.

Loose

STOCK SADDLES

*NORLEIGH DIAMOND



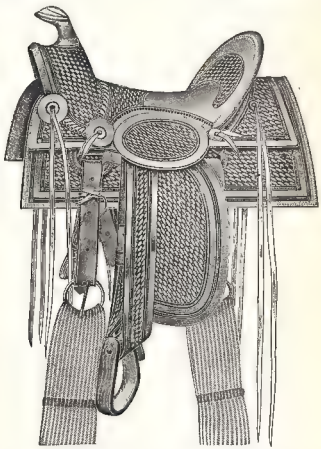
*YOSEMITE

The Best and Most Handsomely Decorated Stock Saddle on the Market. The Front Rig is made Solid with Front Housing and Hood. The Seat is High in Front and Narrow and Deep in Back with an Extra Broad High Cantle. It has a Narrow Fork with a Wide Bulge. Very Fine Workmanship and Finish.

	Each
No. 60—Single Rig; Weight about 29 lbs	**$75 00**

SPECIFICATIONS

Leather—Finest Quality California Steer Hide; Russet Color, Mexican Carved Decoration.
Tree—Yosemite Bulge Fork; 14½ inch Seat; Steel Fork; Beef Hide Covered.
Horn—Steel; Covered, with Cap.
Skirts—27 inches Long, 13½ inches Deep; Bark Tanned, Fleece Lined. Mexican Carved Decoration.
Cantle—Broad and Deep, with High Slope to Front of Seat; Mexican Carved Decoration.
Seat—Solid; Jockey, Cantle and Seat in One Piece; Mexican Carved Decoration.
Back Rigging—Solid Shaped and Blocked to Tree
Front Rigging—Made Solid with Hood and Front Housing
Stirrup Leathers—3 inches Wide, Mexican Carved Decoration
Fenders—9 inches Wide, 17 inches Long, Mexican Carved Decoration, Unlined
Long Latigoes—Single Tie Rig; 1¾ inches Wide.
Cinchas—24 Strand Hard Hair, White California; Japanned Steel Buckles
Stirrups—2 inch Fine Wood Ox Bow; Plain, not Covered.
Tie Strings—Oiled Lace Leather.
Rings—Steel, Nickel Plated.
Rosettes—Leather.



*TEXAS

This is a Solidly Built Saddle on an Up-to-Date Tree, Large and Comfortable for both Horse and Rider. In General Appearance and Wear, it is Equal to many Higher Priced Saddles. The Liberal Size of Tree, Skirts, Fenders and Strapping makes it a Desirable Range Saddle. Excellent Workmanship and Smooth Finish.

	Each
No. 6—Double Rig; Weight about 33 lbs .	**$70 00**

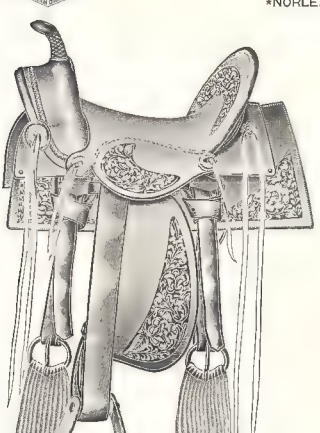
SPECIFICATIONS

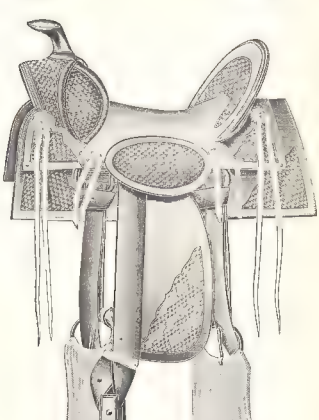
Leather—Heavy Well Selected California, Russet Color; Full Hand Stamped.
Tree—Improved Texas; 16 inch Seat; Steel Fork; Beef Hide Covered.
Horn—Steel, Covered, with Cap.
Skirts—27 inches Long, 15 inches Deep; Bark Tanned; Extra Heavy Felt Lining, Hand Stamped.
Cantle—Broad and Deep, Fancy Hand Stamped and Hand Stitched.
Seat—Solid; Jockey, Cantle and Seat in One Piece, Hand Stamped.
Double Rig—Solid Strap, 2½ inch Front; 1¾ inch Back; Back Cinch Rigging Running Over Saddle Back of Cantle in One Piece
Stirrup Leathers—3 inches Wide, Fancy Hand Stamped
Fenders—9½ inches Wide, 17 inches Long; Fancy Hand Stamped. Unlined
Long Latigoes—1¾ inches Wide
Short Latigoes—1¾ inches Wide
Cinchas—18 Strand California White Angora, Japanned Steel Buckles.
Stirrups—2 inch Heavy Wood Ox Bow, Plain, not Covered.
Tie Strings—Oiled Lace Leather.
Rings—Steel, Leather Covered.
Conchas—Brass, Polished.

Loose

STOCK SADDLES

*NORLEIGH DIAMOND





*SPEEDWAY

Built on a Wide Bulged Fork Tree, is Full Strung and Strongly put Together. Made to Fill the Demand for a Neat, Strong and Handsome Saddle.

Each

No. 10—Double Rig; Weight about 25 lbs. . . . **$49 00**

SPECIFICATIONS

Leather—Heavy, Well Selected California, Russet Color; Mexican Carved Raised Stamp Decoration

Tree—Hard, Bulge Fork, 13½ inch Seat, Steel Fork, Bull Hide Covered

Horn Steel; Rawhide Braided with Leather Cap.

Skirts—28 inches Long, 13½ inches Deep; Heavy Tanned Leather; Heavy Jockey Lined, Mexican Carved Raised Stamp Decoration

Cantle—High and Broad; Rawhide Braid also Rawhide Bound Hood to Match, Mexican Carved Raised Stamp Decoration

Seat Solid, Smooth and Comfortable, Narrow in Center and Wide Bulging Front at Fork; Jockey Cantle and Seat in One Piece, Mexican Carved Raised Stamp Decoration

Double Rig Swell Strap; 2½ inch Front, 1¾ inch Back; Back Cinch Rigging Running Over Saddle Back of Cantle in One Piece.

Stirrup Leathers—2½ inches Wide; Plain

Fenders 9 inches Wide; 16 inches Long, Mexican Carved Raised Stamp Decoration

Long Latigoes—1¼ inches Wide

Short Latigoes—1¼ inches Wide.

Cinchas 18 Strand, White Cotton Texas String; Japanned Steel Buckles.

Stirrups—2 inch Best Wood Ox Bow, Plain, not Covered.

Tie Strings—Oiled Lace Leather.

Rings—Steel, Leather Covered.

Rosettes—Leather.

*DIAMOND SPECIAL

This is one of Our Exclusive Styles; it has a Wide Spreading Bucking Roll Front, which Prevents Injury to a Man when Violently Pitched Forward against the Front of Saddle.

Each

No. 11—Double Rig; Weight about 22 lbs. **$45 00**

SPECIFICATIONS

Leather—Well Selected California, Russet Color; Basket Stamp Decoration

Tree—Spoon, Bucking Roll, 15 inch Seat; Steel Fork, Bull Hide Covered.

Horn—Steel, Covered, with Cap

Skirts—24 inches Long, 14 inches Deep, Heavy Tanned Leather; Heavy Jockey Lined, Basket Stamp Decoration

Cantle—Broad and Straight; Leather Bound, also Leather Bound Hood to Match; Basket Stamp Decoration

Seat Solid, Roomy, Smooth and Comfortable, Bucking Roll Front, a Certain Preventative of Injury to Rider on a Bucking Horse, Jockey, Cantle and Seat in One Piece, Basket Stamp Decoration

Double Rig Front Rigging and Hood is Made Solid in One Piece, Back Rigging is a Swell Strap around Low Back of Cantle

Stirrup Leathers—2½ inches Wide; Plain

Fenders 9 inches Wide, 16 inches Long; Basket Stamped Decoration.

Long Latigoes 1¼ inches Wide

Short Latigoes 1¼ inches Wide

Cinchas 18 Strand, White Angora Hair, Japanned Steel Buckles.

Stirrups—2 inch Heavy Wood Ox Bow, Plain, not Covered.

Tie Strings Oiled Lace Leather.

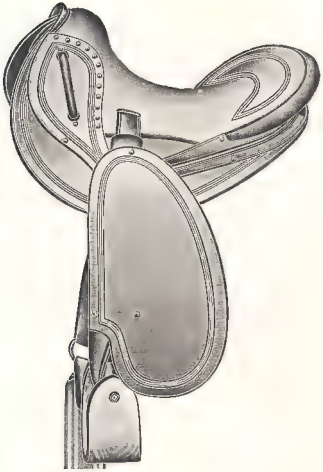
Rings—Steel, Leather Covered.

Rosettes—Leather

Loose

SOUTHERN RIDING SADDLES

*NORLEIGH DIAMOND



GENUINE FERGUSON

Each

No. 28—Single Rig; Weight about 16 lbs. $23.00

SPECIFICATIONS

Leather—Best Selected California, Russet Color.

Tree—Ferguson; 15 inch Seat.

Skirts 13 inches Deep from Center of Seat; 20 inches Long; Russet Tanned Leather; Stamped Border

Cantle—Roll; Broad Full and Well Shaped

Seat—Solid; Very Smooth and Comfortable.

Single Rig—Front Rigging with Mounting Handle Sewed to Skirt, Back Rigging Running over Saddle Back of Cantle Sewed to Skirt

Stirrup Leathers—1¾ inches Wide.

Girth—Corded Web; with Leather Chafes and Japanned Steel Rings

Fenders—9 inches Wide; 17½ inches Long; Hand Stamped Border.

Long Latigoes—1⅝ inches Wide.

Stirrups—5 inch Solid Bent Wood.

Rings—Leather Covered.

FERGUSON LEADER

Each

No. 29—Single Rig; Weight about 17 lbs. $17 50

SPECIFICATIONS

Leather—Heavy Selected Saddle Seats, Russet Color.

Tree—Ferguson, [illegible] Covered.

Skirts—11½ inches Deep from Center of Seat; 20 inches Long; Russet Tanned Leather; Stamped Border.

Cantle—Roll; Broad, Full and Shapely.

Seat—Solid, Broad, Smooth and Comfortable.

Single Rig—Front Rigging with Mounting Handle made Solid and Stabbed to Tree, Back Rigging Running over Saddle Back of Cantle in Two Pieces.

Stirrup Leathers—1¾ inches Wide

Girth—Corded Web; with Leather Loops and Japanned Steel Rings.

Fenders—8 inches Wide, 16½ inches Long; Hand Stamped Border and Decoration

Long Latigoes—1 inch Wide.

Short Latigoes—1 inch Wide.

Stirrups—4 inch Solid Bent Wood.

Bars—Full Leather Lined.

Housing—Cantle Rigs, Nickel Plated Studs and ¾ inch Japanned Steel Rings

Rings—Steel, Black Japanned.

"DIAMOND EDGE IS A QUALITY PLEDGE"

STOCK SADDLES

★NORLEIGH DIAMOND

★BLACK PRINCE

	Each
No. **128BP—Double Rig**; Weight about 20 lbs.	**$35 00**

SPECIFICATIONS

Leather—Solid Saddle; Black Color; Hand Carved.
Tree—Improved Steinway; 15 inch Seat; Steel Fork.
Horn—Steel; Covered; Tie Strings.
Skirts—23 inches Long, 11¼ inches Deep; Black Saddle Leather; Felt Lined; Hand Carved.
Cantle—Roll; Broad and Well Shaped.
Seat—Solid; Roomy and Comfortable; Jockey Cantle and Seat in One Piece.
Double Rig—Front 1⅜x1 inches; Back 1¾ inches; Back Cinch Rigging Running over Saddle Back of Cantle in One Piece.
Stirrup Leathers—2 inches Wide, Hand Carved.
Fenders—7½ inches Wide; 14 inches Long; Hand Carved.
Long Latigoes—1½ inches Wide.
Short Latigoes—1½ inches Wide
Cinchas—16 Strand White Cotton Texas String; Japanned Steel Buckles.
Stirrups—2 inch Ox Bow; Plain, not Covered.
Tie Strings—Lace Leather.
Rings—Steel, Leather Covered.
Conchas—White Composition Metal, Polished.

★WEST TEXAS

	Each
No. **101—Double Rig**; Weight about 18 lbs....	**$32 50**

SPECIFICATIONS

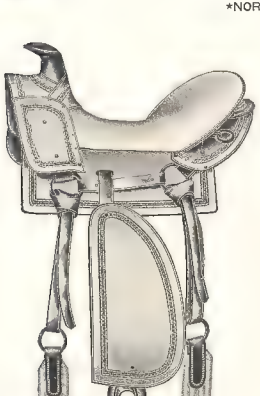
Leather—Heavy Selected Saddle Stock; Russet Color; Basket Stamp Decoration.
Tree—Western Texas; 14½ inch Seat; Steel Fork.
Horn—Steel; Covered, with Cap.
Skirts—22½ inches Long, 13 inches Deep; Russet Tanned Leather; Felt Lined; Basket Stamp Decoration.
Cantle—Roll; Broad and Well Shaped.
Seat—Solid; Bread and Well Shaped; Jockey, Cantle and Seat in One Piece.
Double Rig—Solid Hood Front Rig; Back Rig 1½ inches Wide, Running over Saddle Back of Cantle in One Piece.
Stirrup Leathers—2 inches Wide; Plain, to Lace.
Fenders—7½ inches Wide; 13½ inches Long; Basket Stamp Decoration.
Long Latigoes—1¾ inches Wide.
Short Latigoes—1½ inches Wide
Cinchas—16 Strand White Cotton Texas String; Japanned Steel Buckles.
Stirrups—Ox Bow; Plain, not Covered.
Tie Strings—Lace Leather.
Rings—Steel, Leather Covered.
Rosettes—Leather.

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

STOCK SADDLES

*NORLEIGH DIAMOND



NEW MORGAN

Each

No. 22—Double Rig; Weight about 11 lbs $14.00

SPECIFICATIONS

Leather—Heavy Selected Saddle Stock; Russet Color; Hand Stamped Border Decorations.

Tree—New Style Morgan; 13¾ inch Seat; Wood Fork; Yellow Felt Covered, Yellow Felt Lined Bars.

Horn—Wood; Covered, with Cap.

Skirts—14½ inches Long, 12 inches Deep; Russet Tanned Leather; Unlined; Hand Stamped Border Decorations.

Cantle—Broad and Sloping; Stitched

Seat—Solid; Good Size and Well Shaped; No Jockeys.

Double Rig—1¼ inches Wide Front and Back; Front Rigging Attached to Front Housing, Back Rigging Attached to Rear Housing

Stirrup Leathers—1 inch Wide; Plain Strap

Fenders—4½ inches Wide; 13 inches Long, Hand Stamped Border Decorations

Long Latigoes—1 inch Wide.

Short Latigoes—1 inch Wide.

Girth—Cotton Web with Leather Loops and Japanned Steel Rings.

Stirrups—2½ inch Solid Bent Wood; Plain, not Covered

Rings—Steel, Russet Enameled.

Studs—XC Plated Tin.

WAGON

Each

No. 33—Single Rig; Weight about 14 lbs $22 00

SPECIFICATIONS

Leather—Heavy Selected Harness Stock; Black Color; Hand Stamped Border and Decorations.

Tree—McClellan, 17½ inch; Beef Hide Covered.

Skirts—22½ inches Deep from Center of Seat; 13½ inches Long; Black Harness Leather, Unlined; Fastened to Tree with a Double Row of Brass Screws. Hand Stamped Border and Decorations.

Cantle—Extra Broad and Full; Leather Board; Creased Border.

Seat—Solid Leather Covered 15 inches wide between Ornament

Single Rig—1¼ inches Heavy Black Harness Strap all around.

Stirrup Leathers—1¼ inches Wide; Plain Strap.

Long Latigoes—1¼ inches Wide

Short Latigoes—1¼ inches Wide.

Girth—Heavy Corded Cotton Web with Leather Loops and Japanned Steel Rings

Stirrups—5 inch Heavy Solid Bent Wood; Plain, not Covered.

Rings—Steel, Black Japanned.

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

STOCK SADDLES

*NORLEIGH DIAMOND

*MISSOULA

Very Handsome Northwestern Style Stock Saddle. All Selected Materials and Each Detail Worked Out in the Best Possible Manner.

Each

No. 6—Single Rig; Weight about 26 lbs **$57.00**

SPECIFICATIONS

Leather—Selected California, Russet Color; Full Hand Stamped Zig Zag Border.

Tree—Missoula Wide Bulge Fork; 14½ inch Seat; Steel Fork; Beef Hide Covered.

Horn—Steel, Covered with Cap.

Skirts—25 inches Long, 13 inches Deep; Bark Tanned; Fleece Lined; Full Hand Stamped.

Cantle—High and Straight; Fancy Hand Stamped and Hand Bound.

Seat—Solid, Metal Lined; Very Smooth; Jockey Cantle and Seat in One Piece.

Backrigging—Solid, Shaped and Blocked to Tree.

Front Rigging—2½ inches Wide; Running Over Fork in One Piece.

Stirrup Leathers—Half Double; 2½ inches Wide; Fancy Hand Stamped.

Fenders—6 inches Wide, 17½ inches Long; Fancy Hand Stamped Border; Unlined.

Long Latigoes—Single Tie Rig; 1⅝ inches Wide.

Cinchas—24 Strand California White Angora; Japanned Steel Buckles.

Stirrups—2 inch Best Wood Ox Bow; Plain, not Covered.

Tie Strings—Oiled Lace Leather.

Rings—Steel, Nickel Plated.

Rosettes—Leather.

*ROPE CANTLE

Built on a Moderately Bulged Fork Tree; Large and Roomy. Extremely Smooth Seat. This Style Contains Many Good Points and is the Best Saddle in its Class.

Each

No. 7—Double Rig; Weight about 28 lbs. **$60 00**

SPECIFICATIONS

Leather—Heavy Well Selected California, Russet Color; Mexican Carved Raised Stamp Decoration.

Tree—Greenwood, Wide Fork; 15½ inch Seat; Steel Fork; Beef Hide Covered.

Horn—Steel; Covered, with Cap.

Skirts—28½ inches Long, 12½ inches Deep; Heavy Tanned Leather; Heavy Felt Lined; Mexican Carved, Raised Stamp Decoration.

Cantle—High and Straight; Rope Bound, also Rope Bound Hood to Match; Mexican Carved Raised Stamp Decoration.

Seat—Solid; Jockey, Cantle and Seat in One Piece; Mexican Carved Raised Stamp Decoration.

Double Rig—Solid Strap; 2½ inch Front; 1¾ inch Back; Back Cinch Rigging, Running Over Saddle Back of Cantle in One Piece.

Stirrup Leathers—2½ inches Wide; Mexican Carved Raised Stamp Decoration.

Fenders—8 inches Wide, 17½ inches Long; Mexican Carved Raised Stamp Decoration; Unlined.

Long Latigoes—1½ inches Wide.

Short Latigoes—1¾ inches Wide.

Cinchas—18 Strand California White Angora; Japanned Steel Buckles.

Stirrups—Best Wood Ox Bow; Brass Bound.

Tie Strings—Oiled Lace Leather.

Rings—Steel Rings, Brass Plated.

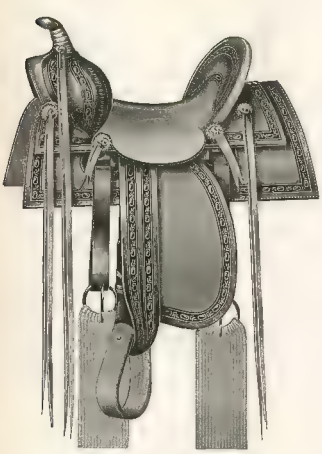
Conchas—Brass, Polished.

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

STOCK SADDLES

*NORLEIGH DIAMOND



*NEW WESTERN BULGE

An Extra Good and Strong Saddle. All Stock of Generous Dimensions and well Selected; Neatly Decorated; Wide Heavy Strapping.

Each

No. 68—Double Rig; Weight about 28 lbs. $35 00

SPECIFICATIONS

Leather—Best Selected California, Russet Color; Fancy Hand Stamped Decorations.

Tree—San Quentin; Extra Wide 13 inch Swell Bulge Bucking Roll; 15½ inch Seat; Steel Fork; Beef Hide Covered.

Horn—Steel; Covered with Cap; Neck Wrapped with Horn String of White Lace Leather.

Skirts—27 inches Long, 15 inches Deep; Heavy Tanned Russet Leather; Heavy Felt Lined.

Cantle—Broad and Straight; White Rawhide Bound.

Seat—Made Solid with Cantle and Jockey all in One Piece.

Double Rig—Front Rig 2½ inches Wide; Back Rig 1⅝ inches in One Piece around Back.

Stirrup Leathers—3 inches Wide; Fancy.

Fenders—9½ inches Wide; 16½ inches Long; Fancy Hand Stamped Decorations.

Long Latigoes—1½ inches Wide.

Short Latigoes—1⅜ inches Wide.

Cinchas—18 Strand White Angora Hair with Black Japanned Steel Buckles.

Stirrups—2 inch Heavy Wood Ox Bow: Plain, not Covered.

Tie Strings—White California Lace Leather.

Rings—Steel, Leather Covered.

Rosettes—Leather.

*SUNSET BULGE

This is a Handsome Saddle with Wide Swell Fork Tree of the Latest Style and Shape. Well Proportioned and Very Strong.

Each

No. 69—Double Rig; Weight about 25 lbs. $43 00

SPECIFICATIONS

Leather—Best Selected California, Russet Color; Basket Stamp Decoration

Tree—San Quentin; Extra Wide 12 inch Swell Bulge Bucking Roll; 15 inch Seat; Steel Fork; Beef Hide Covered.

Horn—Steel; Covered with Cap; Neck Wrapped with Horn String of Yellow Lace Leather.

Skirts—26 inches Long, 12 inches Deep; Heavy Tanned Russet Leather, Felt Lined.

Cantle—Broad and Straight; Plain Leather Bound.

Seat—Made Solid with Cantle and Jockey all in One Piece.

Double Rig—Front Rig 2½ inches Wide; Back Rig 1⅝ inches, in One Piece around Back.

Stirrup Leathers—3 inches Wide; Fancy.

Fenders—9 inches Wide; 16 inches Long; Basket Stamp Decorations.

Long Latigoes—1½ inches Wide.

Short Latigoes—1⅜ inches Wide.

Cinchas—18 Strand Texas, Cotton String with Black Japanned Steel Buckles.

Stirrups—2 inch Heavy Wood Ox Bow; Plain, not Covered.

Tie Strings—Oiled Yellow Lace Leather.

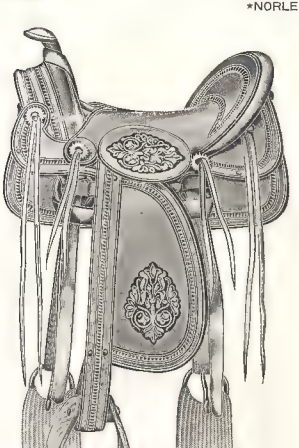
Rings—Steel, Leather Covered.

Rosettes—Leather.

Loose

STOCK SADDLES

*NORLEIGH DIAMOND

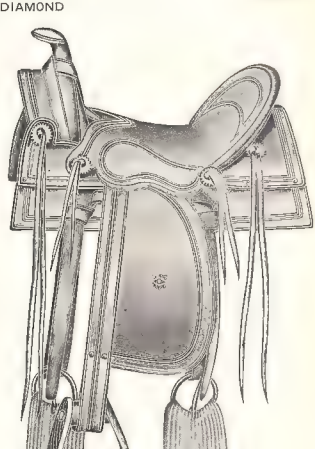


*NORLEIGH

No. 16—**Double Rig;** Weight about 17 lbs — Each $28 00

SPECIFICATIONS

Leather—Heavy Selected Saddle Stock; Russet Color; Fancy Stamped Decoration
Tree—Vegas; 14½ inch Seat; Steel Fork.
Horn—Steel Leather Covered
Skirts—20½ inches Long; 11 inches Deep; Russet Tanned Leather; Felt Lined; Fancy Border Decoration
Cantle—Roll; Broad and Well Shaped
Seat—Solid; Broad and Well Shaped; Jockey, Cantle and Seat in One Piece
Doublerig—Solid Strap, Front 11 inches; Back 1½ inches Wide, Running over Saddle Back of Cantle
Stirrup Leathers—1¾ inches Wide, Fancy Hand Stamped Decoration
Fenders—7 inches Wide; 14 inches Long Fancy Hand Stamped Decoration
Long Latigoes—1¾ inches Wide
Short Latigoes—1½ inches Wide
Cinchas—6 Strand White Cotton Texas String; Japanned Steel Buckles.
Stirrups—4 inch Solid Bent Wood, Plain, not Covered.
Tie Strings—Lace Leather
Rings—Steel, Leather Covered.
Rosettes—Leather



*LAS VEGAS

No. 17—**Double Rig** Weight about 15 lbs — Each $26 00

SPECIFICATIONS

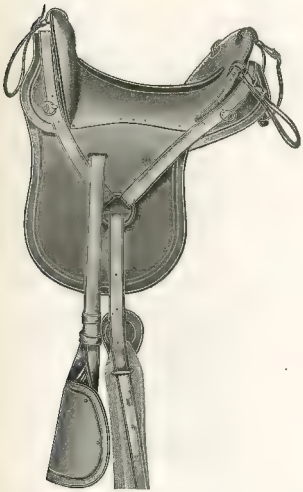
Leather—Heavy Selected Saddle Stock; Russet Color; Plain Creased Borders.
Tree—Vegas, 14½ inch Seat; Steel Fork.
Horn—Steel; Leather Covered
Skirts—20½ inches Long, 10½ inches Deep, Russet Tanned Leather Lined, Plain Border, Creased Seam
Cantle—Standard Full Leather Bound
Seat—Solid, Broad and Well Shaped; Jockey, Cantle and Seat in One Piece
Doublerig—Front 1 inch Wide; Doubled, Back 1½ inches Wide, Running over Saddle Back of Cantle
Stirrup Leathers—1¾ inches Wide, Plain Hand Creased Border
Fenders—7½ inches Wide, 13½ inches Long, Star Center Piece and Plain Creased Hand Creased Border.
Long Latigoes—1¼ inches Wide
Short Latigoes—1 inches Wide
Cinchas—6 Strand White Cotton Texas String; Japanned Steel Buckles
Stirrups—4 inch Solid Bent Wood; Plain, not Covered
Tie Strings—Lace Leather
Rings—Steel Russet Enameled
Rosettes—Leather

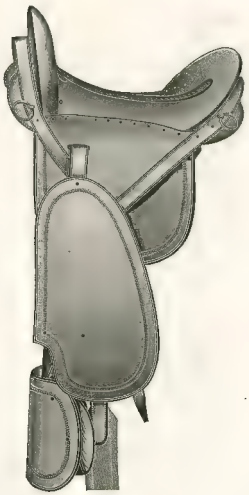
Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

ARMY STYLE SADDLES

*NORLEIGH DIAMOND





GENUINE McCLELLAN

Each

No. 426—Single Rig; Weight about 15 lbs. **$29.00**

SPECIFICATIONS

Leather—Best Selected California; Russet Color.
Tree—No. 1 McClellan; 15 inch Seat.
Skirts—18½ inches Deep from Center of Seat; 13 inches Long; Russet Tanned Leather; Stamped Border
Cantle—Broad and Sloping; with Three Coat Straps and One Coat Strap on Horn.
Seat—Open Center; Sewed all Around.
Single Rig—1¼ inches Front and Back; Solid Straps Running over Front and Back of Saddle
Stirrup Leathers—1¾ inches Wide.
Girth—Corded Web; Combination Buckle and Tie.
Long Latigoes—1¼ inches Wide.
Billets—1¼ inches Wide.
Stirrups—3 inch Covered Wood.
Bars—Leather Covered.
Rings—Steel, XC Plate (Tinned).

McCLELLAN

Each

No. 32—Single Rig; Weight about 10 lbs. **$16.00**

SPECIFICATIONS

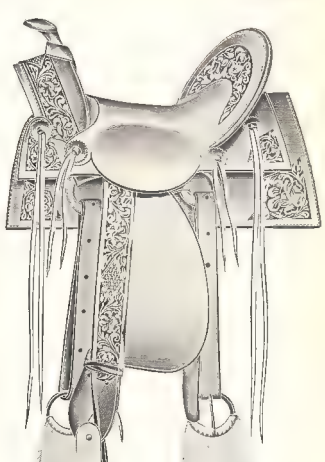
Leather—Heavy Selected Harness Stock; Black Color.
Tree—McClellan; 14 inch Seat; Hide Covered; with Front and Back Arches
Skirts—14 inches Deep from Center of Seat; 11¼ inches Long; Black Tanned Leather; Stamped Border; Fastened with Screws.
Cantle—Broad and Sloping.
Seat—Open Center; Sewed all Around.
Single Rig—1¼ inches Front and Back; Front and Back Rigging Straps go Around Tree in One Piece Each.
Stirrup Leathers—1¼ inches Wide
Girth—Corded Web; with Leather Loops and Japanned Steel Rings.
Long Latigoes—1¼ inches Wide.
Short Latigoes—1¼ inches Wide.
Fenders—8½ inches Wide, 15½ inches Long; Hand Stamped Border.
Stirrups—2½ inch Covered Wood.
Bars—Rawhide Covered.
Rings—Steel, Black Japanned.

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

STOCK SADDLES

*NORLEIGH DIAMOND



*COLORADO

	Each
No. 88—Double Rig; Weight about 25 lbs	**$42.00**

SPECIFICATIONS

Leather—Selected California; Russet Color; Mexican Carved Decoration.
Tree—Colorado; 15 inch Seat, Iron Neck.
Horn—Steel; Leather Covered
Skirts—25½ inches Long, 13 inches Deep; Tanned Leather; Felt Lined; Mexican Carved Decoration.
Cantle—High and Straight; Leather Bound, also Leather Bound Hood to Match.
Seat—Solid; Broad, Smooth and Comfortable; Jockey, Cantle and Seat in One Piece
Double Rig—Solid Strap; 2½ inch Front; 1⅝ inch Back; Back Cinch Rigging Running Over Saddle Back of Cantle in One Piece
Stirrup Leathers—3 inches Wide; Mexican Carved Decoration.
Fenders—8¾ inches Wide; 16½ inches Long
Long Latigoes—1½ inches Wide
Short Latigoes—1½ inches Wide.
Cinchas—18 Strand, White Cotton Texas String; Japanned Steel Buckles.
Stirrups—2 inch Best Wood Ox Bow; Plain, not Covered
Tie Strings—Lace Leather
Rings—Steel, Leather Covered
Rosettes—Leather.

*ARKANSAS

	Each
No. 89—Double Rig; Weight about 21 lbs	**$38 00**

SPECIFICATIONS

Leather—Selected California, Russet Color, Mexican Carved Decoration.
Tree—Arkansas; 15 inch Seat; Iron Neck.
Horn—Steel, Covered, with Cap
Skirts—24 inches Long, 12 inches Deep; Tanned Leather; Felt Lined; Mexican Carved Decoration.
Cantle—High and Straight; Leather Band, also Leather Bound Front with Bead.
Seat—Solid, Broad, Smooth and Comfortable, Jockey, Cantle and Seat in One Piece.
Double Rig—Solid Strap, 2 inch Front, 1⅝ inch Back; Back Cinch Rigging Running Over Saddle Back of Cantle in One Piece
Stirrup Leathers—3 inches Wide; Mexican Carved Decoration
Fenders—7¾ inches Wide; 14½ inches Long.
Long Latigoes—1½ inches Wide
Short Latigoes—1½ inches Wide
Cinchas—18 Strand, White Cotton Texas String; Japanned Steel Buckles.
Stirrups—Best Wood Ox Bow; Plain, not Covered.
Tie Strings—Oiled Lace Leather.
Rings—Steel, Leather Covered.
Rosettes—Leather.

Loose

ADJUSTABLE BENCH PLANES

*BRIDGE TOOL CO.

The Cutter Used in this Line of Planes is of the Finest Tool Steel, Properly Tempered, Honed and Fitted; Works Equally Well in Hard and Soft Wood. The Face of the Plane is Made Perfectly True.

IRON PLANES

Best Quality Cast Iron Parts; Ground Face and Sides; Japanned Inside; Varnished Hardwood Handle and Knob; Brass Adjusting Screw; Lateral and Longitudinal Adjustments.

PLAIN BOTTOM

SMOOTH

	Each
No. BX2 7 inches Long; 1¾ inch Cut; Weight 2¼ lb	$2 20
No. BX3—8 inches Long; 1¾ inch Cut; Weight 3¼ lbs	2 40
No. BX4—9 inches Long; 2 inch Cut; Weight 3¾ lbs.....	2 50

JACK

	Each
No. BX5 —14 inches Long, 2 inch Cut; Weight 4¾ lbs	$3 00
No. BX5½—15 inches Long; 2¼ inch Cut; Weight 5½ lbs..	3 50

FORE

	Each
No. BX6 —18 inches Long; 2¾ inch Cut; Weight 6¾ lbs....	$4 00

JOINTER

	Each
No. BX7 —22 inches Long; 2¾ inch Cut; Weight 8¼ lbs	$4 50
No. BX8 24 inches Long; 2¾ inch Cut; Weight 9 lbs..	5 20

One in a Box

CORRUGATED BOTTOM

The Corrugated Bottom Lessens Friction and Makes an Easier Running Tool Than the Smooth Bottom Plane.

SMOOTH

	Each
No. BX8C — 7 inches Long; 1¾ inch Cut; Weight 2¼ lbs	$2 20
No. BX9C 8 inches Long; 1¾ inch Cut; Weight 3¼ lbs	2 40
No. BX4C — 9 inches Long; 2 inch Cut; Weight 3¾ lbs	2 50
No. BX4½C—10 inches Long; 2¼ inch Cut; Weight 4½ lbs	3 00

JACK

	Each
No. BX5C 14 inches Long, 2 inch Cut; Weight 4¾ lbs	$3 00
No. BX5½C— 15 inches Long; 2¼ inch Cut; Weight 5½ lbs	3 50

FORE

	Each
No. BX6C 18 inches Long; 2¾ inch Cut; Weight 6¾ lbs.	$3 80

JOINTER

	Each
No. BX7C —22 inches Long; 2¾ inch Cut; Weight 7¾ lbs	$4 50
No. BX8C 24 inches Long; 2¾ inch Cut; Weight 9 lbs	5 20

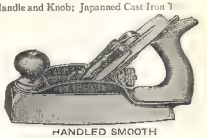
One in a Box

WOOD BOTTOM

Adjustable Wood Bottom Planes with Iron Top; Selected Beech Bottoms, Handle and Knob; Japanned Cast Iron T

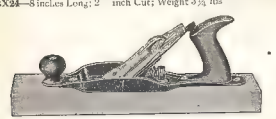
UNHANDLED SMOOTH

	Each
No. BX22—8 inches Long; 1¾ inch Cut; Weight 3 lbs	$1 75
No. BX23 9 inches Long; 1¾ inch Cut; Weight 3 lbs	1 75
No. BX24—8 inches Long; 2 inch Cut; Weight 3¾ lbs	1 75



HANDLED SMOOTH

	Each
No. BX35—9 inches Long; 2 inch Cut; Weight 3½ lbs	$2 00
No BX36—10 inches Long; 2¾ inch Cut; Weight 4¼ lbs	2 20



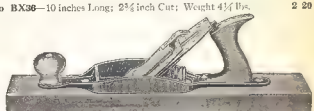
JACK

	Each
No. BX26—15 inches Long; 2 inch Cut; Weight 4¾ lbs.	$1 80
No. BX27—15 inches Long; 2¼ inch Cut; Weight 4¾ lbs.....	2 00

FORE

	Each
No. BX28—18 inches Long; 2¾ inch Cut; Weight 6¼ lbs.	$2 50
No. BX29—20 inches Long; 2¾ inch Cut; Weight 6¾ lbs.	2 50

One in a Box



JOINTER

	Each
No. BX31—24 inches Long, 2¾ inch Cut; Weight 8¾ lbs	$2 50
No. BX32—26 inches Long; 2¾ inch Cut; Weight 8¾ lbs	2 50
No. BX33 -28 inches Long, 2¾ inch Cut, Weight 8¾ lbs	2 50

"DIAMOND EDGE IS A QUALITY PLEDGE"

IRON BLOCK PLANES

★ BRIDGE TOOL CO.

Best Quality Cast Iron Body and Cap; Tool Steel Cutters, Tempered, Ground and Polished

ADJUSTABLE THROAT

Machined and Polished Cast Iron Face and Sides; Ground Face and Sides; Japanned or Nickel Plated Cap and Inside; Brass or Nickel Plated Adjustment Screws.

Throat Can be Quickly Opened or Closed for Coarse or Fine Work. Sides are Depressed to Give Firm Grip Hold on Tool. Lateral and Longitudinal Adjustment. Japanned Inside and Cap; Polished Bottom and Sides; Brass Adjusting Screws

	Each
No. BX9½—6 inches Long; 1¾ inch Cut, Weight 1¼ lbs.	**$1 10**
No. BX15—7 inches Long; 1¾ inch Cut; Weight 1½ lbs.	**$1.20**

LOW ANGLE

Nickel Plated Screws and Trimmings; Japanned Inside of Frame; Ground and Polished Face and Sides. Lateral and Longitudinal Adjustment

	Each
No. BX60—6 inches Long; 1½ inch Cut; Weight 1¼ lbs.	**$1.20**
No. BX65—7 inches Long; 1¾ inch Cut; Weight 1¾ lb.	**$1.30**

One in a Box

PLAIN THROAT

Cast Iron Body and Cap; Tool Steel Cutter; Tempered, Ground and Polished

TOY SIZES

For Amateurs' Use and Boys' Tool Chests
All Japanned; Ground Face and Blade

WITHOUT HANDLE

WITH HANDLE

	Each
No. BX101—3½ inches Long; 1 inch Cut; Weight ¾ lb.	**$0.30**
No. BX100—3½ inches Long; 1 inch Cut; Weight ¾ lb.	**$0.35**

NON-ADJUSTABLE

Blade Secured or Released by Turning Thumb Wheel

With Beechwood Knob

	Each
No. BB102—5½ inches Long; 1¾ inch Cut; Weight ¾ lbs.	**$0.40**
No. BX110—7½ inches Long; 1¾ inch Cut; Weight 1¼ lbs	**$0.55**

ADJUSTABLE

Blade Secured or Released by Turning Thumb Wheel; Longitudinal Adjustment of Cutter.

LEVER ADJUSTMENT

SCREW ADJUSTMENT

	Each
No. BX103—5½ inches Long; 1¾ inch Cut; Weight 1 lb.	**$0.55**
No. BX220—7½ inches Long; 1¾ inch Cut; Weight 1½ lbs	**$0.75**

DOUBLE END (NOT ADJUSTABLE)

Japanned Frame and Trimmings; Nickel Plated Adjusting Screw and Walnut Knob; Has Two Slots and a Movable Cutter Seat; Cutter can be Removed and Seat Reversed when it is Desired to Use the Tool as a Nosing Plane when Working up to Walls or into Corners.

	Each
No. BX130—8 inches Long; 1¾ inch Cut; Weight 2 lbs.	**$0.70**

One in a Box

BASE BALL BATS

*BINGLER BAT CO.

*PRACTICE

Per Dozen

No. 20—Fine Quality Straight Grained Ash; League Style, Tape Wrapped; Burnished Lightly to Harden the Surface; Assorted Lengths, 28 to 32 inches; Weight per Dozen 19½ lbs..... **$3 60**

Six Dozen in a Crate; Average Weight per Crate 135 lbs.

*BINGLER, JR.

Per Dozen

No. 15—Finest Selected Air Dried Ash; Boys' Size; Burnished Lightly to Harden the Surface; Assorted Lengths, 28 to 30 inches; Weight per Dozen 18 lbs **$2 90**

Six Dozen in a Crate; Average Weight per Crate 134 lbs.

*SURPRISE

Per Dozen

No. 10—Ash; Boys' Size; Natural Finish; Assorted Lengths, 28 to 30 inches; Weight per Dozen 19½ lbs **$2 00**

Six Dozen in a Crate; Average Weight per Crate 129 lbs.

*JUNIOR

Per Dozen

No. 5—Hardwood; Boys' Size; Natural Finish, with Green Painted Ends, Assorted Lengths, 28 to 30 inches; Weight per Dozen 12 lbs **$1 00**

Six Dozen in a Crate; Average Weight per Crate 125 lbs.

BAT BAGS

*DIAMOND BRAND

INDIVIDUAL SIZE

CANVAS

Each

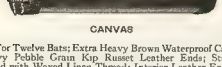
No. 2C—For One or Two Bats; Extra Heavy Brown Waterproof Canvas; Heavy Pebble Grain Calf Russet Leather Ends; Strongly Sewed with Waxed Linen Thread; Interior Leather Entrance Flap to Fit Over Ends of Bats; Leather Fastening Strap with Tinned Buckle, Flat Double Sole Leather Handle; Size 36x6x2½ inches; Weight 1 lb **$2 40**

LEATHER

Each

No. 2L—For One or Two Bats; Finest Quality Heavy Russet Bridle Leather; Fancy Hand Stamped Border; Mail Bag Style Bottom and Entrance, Strongly Sewed with Waxed Linen Thread; Flap Cover; Leather Fastening Strap with Tinned Buckle; Flat Double Sole Leather Handle; Size 36x6x2½ inches; Weight 1⅝ lbs. **$5 40**

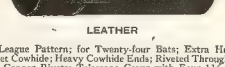
CLUB SIZE



CANVAS

Each

No. 12C—For Twelve Bats; Extra Heavy Brown Waterproof Canvas; Heavy Pebble Grain Kip Russet Leather Ends; Strongly Sewed with Waxed Linen Thread; Interior Leather Entrance Flap to Fold Over, Double Leather Fastening Strap with Tinned Buckles; Rounded Leather Handles; Size 36x9 inches; Weight 3 lbs..... **$5 40**



LEATHER

Each

No. 24L—League Pattern; for Twenty-four Bats; Extra Heavy Russet Cowhide; Heavy Cowhide Ends; Riveted Throughout with Copper Rivets; Telescope Cover with Four 1½ inch Fastening Straps with Tinned Buckles and Leather Loops; Rounded Leather Handles; Designed Specially for Traveling Clubs; Size 38x15 inches; Weight 16 lbs..... **$50 00**

One in a Package

"DIAMOND EDGE IS A QUALITY PLEDGE"

BASE BALL BATS

★BINGLER

Bingler Bats are the Combined Results of Suggestions of Some of the Big Leagues' Expert Batters. They Embody All the Good Features Essential to Hard and Scientific Work. Their Driving Power is Unsurpassed. We Use Nothing but the Best Selected Straight Grained Second Growth Ash, Open Air Dried and Thoroughly Seasoned Before Turning. All Timber is Hand Split (Not Sawed), Thereby Preserving a Continuous Grain. Each Bat Hand Turned to Gauge. Used by Professional Ball Players and Wherever the Best is Wanted.

Per Dozen

No. 100B—**Tape Wrapped Handle; Burnished Black** to Harden the Surface; Assorted Lengths 32 to 36 inches, Weight per Dozen 30 lbs **$18 00**

Per Dozen

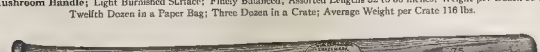
No. 100T—**Tape Wrapped Handle; Natural Finish;** Assorted Lengths 32 to 36 inches; Weight per Dozen 33 lbs **$17 50**

Per Dozen

No. 100—**Plain Handle;** Natural Finish, Assorted Lengths 32 to 36 inches; Weight per Dozen 27 lbs **$14 50**

Per Dozen

No. 100M Mushroom Handle; Light Burnished Surface; Finely Balanced, Assorted Lengths 32 to 36 inches; Weight per Dozen 30 lbs **$17 00**
Twelfth Dozen in a Paper Bag; Three Dozen in a Crate; Average Weight per Crate 116 lbs.



★VARSITY

Per Dozen

No. 75—First Quality Ash; Natural Finish and Highly Polished; Assorted Lengths 32 to 36 inches; Weight per Dozen 24 lbs **$12.00**
Twelfth Dozen in a Paper Bag; Six Dozen in a Crate; Average Weight per Crate 195 lbs.

★LEAGUE

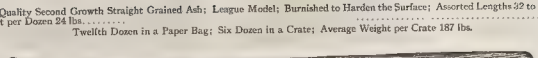
Per Dozen

No. 50—First Quality Ash; Regulation League Model; Natural Finish and Highly Polished; Assorted Lengths 32 to 36 inches; Weight per Dozen 27 lbs **$9.00**
Twelfth Dozen in a Paper Bag; Six Dozen in a Crate, Average Weight per Crate 190 lbs.

★HIGH SCHOOL

Per Dozen

No. 40—Good Quality Second Growth Straight Grained Ash; League Model; Burnished to Harden the Surface; Assorted Lengths 32 to 36 inches; Weight per Dozen 24 lbs **$7.20**
Twelfth Dozen in a Paper Bag; Six Dozen in a Crate; Average Weight per Crate 187 lbs.



★AMATEUR

Per Dozen

No. 25—Second Growth Straight Grained White Ash; Natural Finish and Highly Polished; Assorted Lengths 32 to 36 inches; Weight per Dozen 27 lbs. **$4 80**

Six Dozen in a Crate, Average Weight per Crate 175 lbs.

"DIAMOND EDGE IS A QUALITY PLEDGE"

ROAD SCRAPERS

ROUND BACK, WITH RUNNERS

Has a Perfect Cutting Edge and Fills Easily; The Back is Shaped to Prevent Dirt Going Over Top; The Runners Lighten the Draft and Prevent Wear from Coming on the Bottom of Scraper. High Carbon Steel, No. 10 Gauge, Pressed from a Single Plate into a Solid Bowl without Slit, Seam or Lap. The Bowl is Well Rounded at the Sides where the Bottom is Curved up to Form the Sides, Causing Them to Fill Easily and Carry Well; The Bail, Hooks and Swivel are Heavy Wrought Steel; 29½ inch Heavy Hardwood Handles; All Painted in Black; These Scrapers Are Full Size and Will Scour Well in Any Soil.

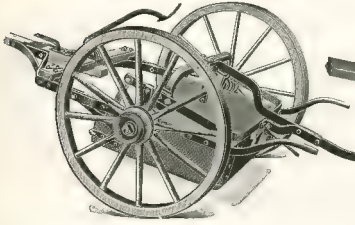
Nos.	1R	2R	3R
Capacity, Cubic Feet	7	5	3
Width Bowl, Inches	31	29	28
Depth Bowl, Inches	11	10	9
Weight, Lbs	95	83	74
Each	$9.60	8.00	7.70

SLUSSER PATTERN, STRAIGHT BACK, WITH RUNNERS

Straight Back; One Piece Bottom and Sides; Riveted Back; 10 Gauge High Carbon Steel; The Bottom is Sufficiently Rounded at Back to Prevent the Dirt Sticking; Extra Heavy Bail, Swivel, Hooks and Handle Sockets; 29½ in. Hardwood Handles; All Parts Painted Black; Full Size and Will Scour in Any Soil; The Runners Lighten the Draft and Prevent the Wear Coming on the Bottom of the Bowl.

Nos.	1SR	2SR	3SR
Capacity, Cubic Feet	7	5	3½
Width Bowl, Inches	31	29	27
Depth Bowl, Inches	11	10	9
Weight, Lbs	103	88	76
Each	$9.60	8.00	7.70

✣WHEEL SCRAPERS

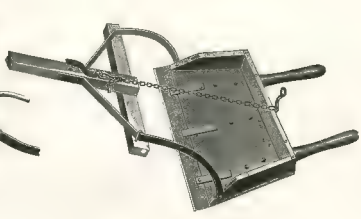


✣ AMERICAN

Bowl—One Piece Heavy Sheet Steel, Bent Cold, Riveted Corners. **Axle**—High Arched with Patent Sand Collar. **Tongues**—With Trussed Wood Cross Bars (Except No. 1W). Bail, Tongue Irons and Levers of Heavy Wrought Steel. Iron Parts Painted Black; Wood Parts Painted Red.

Nos.	1W	2W	2½W	3W
Capacity, Cubic Feet	9	12	14	16
Height of Wheels, Inches	35	40	44	46
Width of Tires, Inches	2¾	3	3	3
Diameter of Axle, Inches	1⅝	1¾	1¾	1¾
Weight Each, Lbs.	400	600	650	750
Each	$65.00	75.00	88.00	92.00

✣TONGUE SCRAPERS



✣ CHICAGO PATTERN

For Making and Leveling Roads, Cutting and Cleaning Ditches and Moving Large Quantities of Dirt; Extra Heavy, Well Seasoned Box, Thoroughly Bolted, Heavy Steel Draw Bars; Extra Quality Steel Blade, Ground and Sharpened; Riveted to Straps and Steel Scraper Bottom; Heavy Round Handles.

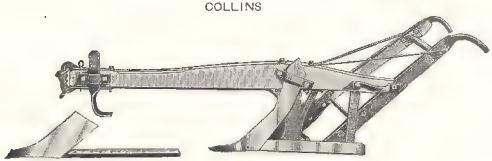
Each

No. CT—Width of Cut 48 inches; Length of Bowl 22 inches; Depth at Back 3½ inches; Weight 120 lbs. **$11.00**

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

HEAVY GRADING PLOWS

COLLINS

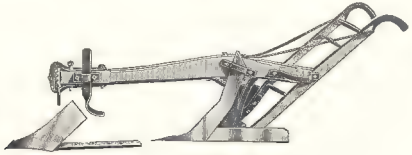


GIANT
11 inch Cut

Heavy and Long White Oak Beam, Extra Braced Standard Braced from Rear End of Beam Down to Landside; Fine, Tough, Extra Heavy Steel; Warranted Strong Enough to Turn up Macadam Stones in Cuts or **Hard Pan** Cuts, or to Work in Ground Full of Grubs or when Frozen. The Handles are Lined with Iron Along the Entire Length and the Entire Bottom is Sent Down; Each Bottom has an Extra Duck Bill Point Welded on the End of Share; Cuts from 11 to 12 inches; May be Used with **Six to Twelve Horses**

	Each
No. G —Plow Only, Without Extra Share, Weight 275 lbs	$48 00
No. GE Plow, with Extra Share, Weight 295 lbs	61 00
No. GES Extra Share, with Landside Weight 85 lbs	12 50

The Giant Plow is a Great Favorite with Contractors, [illegible] Other Work as It Will [illegible] for Repairs When Other Plows have Been Pulled to Pieces, these have Stood Every Test.



BOSS
11 inch Cut

A Very Strong Plow for Work with from Two to Four Horses; Made in Most Respects Like the Giant, But on a Lighter Scale; An Excellent Plow for Lighter Railroad Work, and Especially Township Road Work.

	Each
No. B11 Plow Only, without Extra Share; Weight 130 lbs	$38 00
No. B11E Plow, with Extra Share; Weight 170 lbs	46 00
No. BES —Extra Share, with Landside, Weight 50 lbs	9 80

DISTRICT ROAD PLOWS

COLLINS TWO HORSE
11 inch Cut

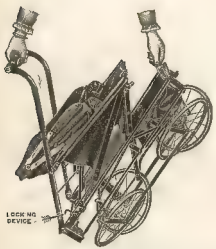
Solid Bar Crucible Steel Share; Braced Steel Post; Strapped Beam, Hardened Steel Mouldboard; Reversible Quincy Cutter, Braced Handle

	Each
No. ND11X—Plow Only, without Extra Share; Weight 105 lbs	$35 50
No. ND11E Plow with Extra Share; Weight 125 lbs	31 00
No. NDES Extra Share, with Landside; Weight 20 lbs	6 40

This Wood Plow has Become a General Favorite for all Kinds of Work in Dirt Roads; It is of Medium Weight and Quite Strong; Contractors Find It to be Just the Thing for all Ordinary Grading

GO-CARTS

COLLAPSIBLE



★CUPID

The Best That Money and Brains Can Produce. One Motion Opens or Closes

Body and Hood—Finest Quality Imitation Leather; Assorted Colors, Green, Blue, Black or Tan; Large and Roomy with 13½ x 9½ inch Spring Seat.
Gear and Wheels—All Steel, Highly Finished; Wheels 10 inch with ⅝ **inch Goodrich Rubber Tires;** Black Enameled.
Handle Rods and Handle—Rods are Seamless Tubular Steel; Cross Handle is Fancy Rubberoid.
Foot Rail and Cross Bar to Hood—Nickel Plated and Polished.

	Each
No. 700—Black Japanned Framework; Weight 40 lbs	**$18 50**
No. 700N—Nickel Plated Framework; Weight 40 lbs	**21 50**
No. 800—With 17¾ x 9½ inch Seats for **Twins;** Black Japanned Framework; Weight 45 lbs	**29 00**

One in a Crate

★PULLMAN

New and Original: English Perambulator Design, with High Veneered Sides; Folds Perfectly Flat; Adjustable Back; will Lie Flat.
Body—Wood Veneered; **Hood**—Best Quality Leatherette; New Idea, Extra Large Double Joint Braces; Assorted Colors, Black, Brown and Green.
Wheels—Steel, 12 in., Japanned; ⅝ **inch Rubber Tires;** Double Fork and Braces.
Frame and Pusher—Bicycle Steel Tubing; Nickel Plated Hand Parts; Heavy Steel Gearing, Seat, Padded; Width 11 inches, Depth 9 inches.

	Each
No. 750—Complete with Hood, Weight Each 30 lbs	**$17 00**

One in a Crate

★LULLABY

Operates with One Motion

Body and Hood—Best Grade Leatherette, Supported on New Idea Sensitive Springs; Assorted Colors, Black, Green and Brown.
Wheels Steel, 10 inch Tinned; ⅝ **inch Rubber Tires;** Double Wheel Forks and Braces.
Frame and Pusher—Bicycle Steel Tubing; Pusher, all Nickel Plated; Heavy Steel Gearings.
Back and Foot Rest—Adjustable.
Seat—Padded; Width 11 inches, Depth 9 inches.

	Each
No. 760—Complete with Hood; Weight Each 33 lbs	**$14 50**

GO-CARTS

*DIAMOND BRAND

Large Size Folding

*MARTHA WASHINGTON

Body—Varnished Reed Work, Highly Finished, Natural Color; Adjustable Back and Dash; Ornamental Sides with Large Roll Edge; Seat and Dash Especially Closely Woven.

Gear—All Steel; Front and Rear Springs; Patented Foot Brake; Independent Back and Dash Fixtures; Solid Steel Pusher, with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule in Center; Nutless Axles; Gearing, Green Enamel.

Wheels—12 inch, Enameled Green; ⅝ **inch Rubber Tires**; Rubber Hub Caps; Patented Anti-Friction Wheel Fasteners.

Strap—Embossed Russet Oak Leather.

Upholstering—Corduroy; Three Section, Ruffled, Furnished in Green, Brown or Drab.

Parasol—Brussels Net; One Deep Ruffle and Rosette; Double Lining, White and Green Silesia.

Seat—Padded; Corduroy Upholstered; Width 12 inches, Depth 12¾ inches.

	Each
No. 1003P Complete with Parasol	$32 50
No. 1003 —Without Parasol	29 00

Weight Each 60 lbs.

*PHOEBE

Body—Varnished Reed Work, Highly Finished, Natural Color; Adjustable Back and Dash; Ornamental Sides Closely Woven, with Fancy Open Work and Top Scroll; Seat and Dash are Especially Closely Woven.

Gear—All Steel; Front and Rear Springs; Patented Foot Brake; Independent Back and Dash Fixtures; Solid Steel Pusher, with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule in Center; Axles are Nutless; Gearing, Green Enamel.

Wheels—12 inch, Enameled Green; ⅝ **inch Rubber Tires**; Rubber Hub Caps; Patented Anti-Friction Wheel Fasteners.

Strap—Embossed Russet Oak Leather.

Upholstering—Mission Damask; Three Section, Ruffled. Furnished in Myrtle Green.

Parasol—Brussels Net; One Deep Ruffle and Rosette; Double Lining, White and Green Silesia

Seat—Padded; Mission Damask Upholstered; Width 12 inches, Depth 12½ inches.

	Each
No. 1002P—Complete with Parasol	$26 50
No. 1002 Without Parasol	23.00

Weight Each 55 lbs.

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Small Park Size Folding

*VICTOR

Body—Hardwood Finished in Dark Blue Striped by Hand.

Gear—Enameled Dark Blue; Tubular Steel Pusher, with Sectional Wood Cross Handles, Enameled White, with Brass Plated Ferrules; Independent Back and Dash Fixtures; Front and Rear Springs; Nutless Axles, with Favorite Anti-Friction Wheel Fastener. Peerless Foot Brake.

Wheels—Steel, 14 inch; 1½-inch Rubber Tires; Brass Hub Caps; Metal Work, Dark Blue.

Strap—Embossed, Black Leather.

Upholstering—Best Quality Imitation Leather.

Hood—Best Quality Imitation Leather, Dark Blue; Brass Polished Hood Fixtures.

Seat—Close Woven Reed, Width 12 inches, Depth 12½ inches.

Each

No. 1503—Complete with Hood; Weight Each 85 lbs. $58 00

*VICTORIA

Body—Hardwood, Finished in Dark Blue; Panel Decoration; Sides Striped by Hand.

Gear—Enameled Dark Blue; Solid Steel Pusher, with Sectional Wood Cross Handles; Enameled White, with Brass Plated Ferrules; Independent Back and Dash Fixtures; Front and Rear Springs; Nutless Axles with Favorite Anti-Friction Wheel Fastener; Foot Brake.

Wheels—Steel, 10 inch; ⅜ inch Rubber Tires; Brass Hub Caps; Metal Work Dark Blue.

Strap—Embossed, Black Leather.

Upholstering—Special Quality Imitation Leather on Top of Sides.

Hood—Special Quality Imitation Leather; Dark Blue.

Seat—Close Woven Reed; Width 12 inches, Depth 12½ inches.

Each

No. 26V—Complete with Hood; Weight Each 85 lbs..... .....$26 50

One in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

GO-CARTS

*DIAMOND BRAND

Large Size Folding

Body, Dash and Hood—Varnished Reed Work, Natural Color; Reclining Back.

Gear—All Steel; Front and Rear Springs; Patented Foot Brake; Solid Steel Pusher with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule in Center; Nutless Axles with Patent Anti-Friction Fasteners; Gearing Green Enameled.

Wheels—12 inch, Enameled Green; **⅜ inch Rubber Tires.**

Strap—Russet Oak Leather.

Upholstering—Rep; Cord Fasteners, Assorted Colors, Green, Brown or Drab.

Hood—Closely Woven Reed Work over Strong Bows; Lined to Match the Upholstering

Seat—Padded; Rep Upholstered; Width 11¼ inches, Depth 12½ inches.

Each

No. 1501—Complete with Hood; Weight Each 75 lbs..... **$30 00**

One in a Crate

Body, Dash and Hood—Varnished Reed Work, Natural Color; Reclining Back.

Gear—All Steel; Front and Rear Springs; Patented Foot Brake; Solid Steel Pusher with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule in Center; Nutless Axles with Patent Anti-Friction Fastener; Gearing Green Enameled.

Wheels—12 inch, Enameled Green; **⅜ inch Rubber Tires.**

Strap—Russet Oak Leather.

Upholstering—Rep; Cord Fasteners, Assorted Colors, Green, Brown or Drab

Hood—Open Woven Reed Work, with Strong Bows; Lined to Match Upholstering.

Seat—Padded; Rep Upholstered; Width 11½ inches, Depth 12½ inches.

Each

No. 1500—Complete with Hood; Weight Each 75 lbs. **$26.50**

One in a Crate

SHOW CASE FILLERS

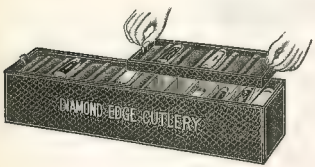
FOR POCKET KNIVES AND RAZORS

Very Attractive and Compact; Hard Wood Frame, Covered with a Fine Black Waterproof Cloth Resembling Morocco Leather; the Upper **Partitioned Removable Trays** for Display Purposes are Covered with Best **Purple Silk Plush;** the **Partitioned Compartments** Underneath to Hold a Duplicate Stock, are Made of Heavy Red Fibre, which Will Not Crack. In Order to Keep Record of Numbers and to Avoid Patterns Becoming Mixed, Paste Labels on Each Side of Each Tray and Gummed Labels on the Side of Each Compartment, Corresponding with the Numbers in Each Partition

A Show Case Fitted with these Fillers Makes a Very Attractive and Beautiful Display

Each Filler is Stenciled in Large Gold Leaf Letters, "*Diamond Edge* CUTLERY" or "WARRANTED CUTLERY," whichever is Preferred

NOTE.—Be Sure to Specify Style Lettering Desired when Ordering



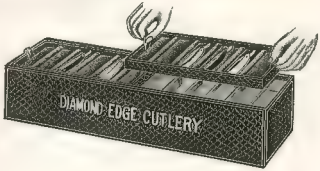
FOR POCKET KNIVES

Two Plush Trays, Twelve Compartments; Two Knives of Each Pattern can be Sampled on Each Partition.

Each

No. PKF Length 22 inches; Width 5¾ inches; Height 3¾ inches **$3.60**

One in a Package; Weight 2¾ lbs.



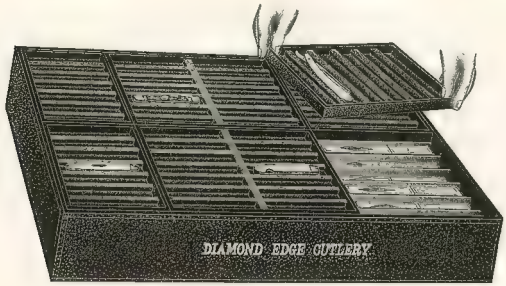
FOR RAZORS

Two Plush Trays, Twelve Compartments; One Razor of Each Pattern can be Sampled on Each Partition.

Each

No. RF —Length 22 inches; Width 7¾ inches; Height 3¾ inches..**$4 50**

One in a Package; Weight 3¾ lbs.



COMBINATION POCKET KNIFE AND RAZOR

This is an Admirable Case for Drug Dealers, Stationery or Hardware Merchants, Displaying a Well Assorted Line of Pocket Knives and Razors, Together with the Stock.

Four Plush Trays for Displaying 42 Patterns of Pocket Knives and Two Plush Trays for Displaying 12 Patterns of Razors.

Each

No. CPR—Length 21 inches, Width 17 inches; Height 3¾ inches. **$10.00**

One in a Package; Weight 7½ lbs.

"Diamond Edge is a Quality Pledge"

FISHING TACKLE SIGNS

★ DIAMOND

Each

No. DFS—Heavy Stamped Tin, Finished with a Heavy Coat of Gold Bronze; the Words "Diamond Tackle" Lettered in Black; Both Sides of Sign are Stamped Out of a Sheet of Tin and Soldered Together, Giving it the Exact Shape of the Living Fish; Rings Soldered in Back, so Sign Can be Suspended in any Convenient Place. This Sign Should be Hung in Front of Every Dealers Store in Fishing Tackle. It is Appropriate and Helps to Increase Business. Size 24 inches Long by 10½ inches Through Widest Part; Weight 1¼ lbs. Loose **$5 50**

FISHING TACKLE ASSORTMENTS

★ TRIUMPH

Triumph
TRADE MARK

A Most Convenient and Complete Fishing Tackle Assortment, Which will Help the Retailer Very Materially in Supplying the Demands of the Trade. Assortment Consists of good Quality Cotton Lines, Floats, Sinkers, Fish Hooks and Furnished Lines. This Assortment is Gotten up for the Retail Dealer Whose Trade is Limited to Staple Items of Fishing Tackle.

CONTENTS

100 Hooks No. CB22.	6 Dozen Lines No. E1
100 Hooks No. CB25.	2 Dozen Lines No. E3.
100 Hooks No. K1.	1 Dozen Lines No. S015
100 Hooks No. K3.	1 Dozen Lines No. S315.
100 Hooks No. K7.	1 Dozen Furnished Lines No. 100
100 Hooks No. K9.	3 Dozen Furnished Lines No. 200
100 Hooks No. K2/0.	¾ Dozen Furnished Lines No. 500
100 Hooks No. K4/0.	½ Dozen Furnished Lines No. 600
100 Hooks No. EC2/0.	1 Ball 2 oz. Staging.
100 Hooks No. EC3/0.	½ Dozen Floats No. W1¼.
1 Dozen Sinkers No. BB.	½ Dozen Floats No. WAB3½

1 Dozen Sinkers No. C1. 1 Dozen Sinkers No. C2 1 Dozen Sinkers No. C3

Each

Triumph Fishing Tackle Assortment; in Black Cloth Covered Cardboard Boxes; Size 13½ x 19¼ x 2¾ inches, Weight Each 7¼ lbs **$12 00**

THE ANGLER'S GUIDE

Per Copy

Angler's Guide—Contains Full Information Regarding Fish and Fishing Handsomest and Most Practical Angler's Book Ever Published. Portraits, Histories, Local Names, etc., of all the Marine and Inland Species; 2000 Fishing Resorts; Beautiful Half-tone Scenes, 200 pages; Illustrated; Weight Each 12 ozs. **$0 90**

SWIMMING JACKETS OR LIFE PRESERVERS

TORPEDO

Made of Non-absorbent Vegetable Fiber, Covered with Waterproof Material. Two Buoys Connected with Heavy Canvas and with Tapes and Eyelets to Fasten Around Body. Will Float a Live Weight of 400 lbs. Indefinitely. Are Readily Adjusted and in no Way Impede the Movement of the Swimmer. Each

No. TSJ—Adult's Size; Buoys 18 x 6 inches; Weight 18 ozs. **$3.00**

One in a Box

WATER WINGS

AYVAD

These Wings Will Support a Man of 250 lbs. as Easily as a Boy of 50 lbs., for the Reason That it Takes Less Air to Support a Large Body Than a Smaller One; and Being Porous, They Allow Just Enough Air to Escape to Adjust Themselves Properly to the Size of the Body to be Floated; To Use, Wet the Wings Thoroughly, Inflate Until the Air Bubbles From the Seams, Then Press Together the Two Ring Marks Under the Mouth Piece; the Body and the Water Will do the Rest; Weight Each 3 oz., Size 12 x 24 inches.

Per Dozen

No. WW1—Plain White; Good Quality. **$4 80**

No. WW2—Assorted Colors; Extra Quality. **7.20**

One Dozen in a Package; Weight per Dozen 1¾ lbs.

1847 ROGERS BROS. SILVER PLATED FLAT WARE 1847 ROGERS BROS.

1847 ROGERS BROS.

Best Quality 18% Nickel Silver Base, Plated with Pure Silver and Warranted in every Respect

MARKS

1847 ROGERS BROS. XS TRIPLE
Tea Spoons Plated not Less than 6 ozs. Silver to the Gross (Other Staple Pieces in Proportion).

1847 ROGERS BROS. XS QUINTUPLE
Tea Spoons Plated not Less than 10 ozs. Silver to the Gross (Other Staple Pieces in Proportion)

The Plate on Fancy Pieces will be in Keeping with Grades Described above

TIPPED PATTERN

Bright Finish Handles

Cuts Two Fifths Size

TEA SPOONS

Length 5⅞ inches; Bright Finish Bowls

		Per Dozen
No. RTT10—XS Triple Plate	$5.50	$4.25
No. RTT15—XS Quintuple Plate	7.50	6.00

Weight per Dozen 1 lb.

DESSERT SPOONS

Length 7⅛ inches; Bright Finish Bowls

		Per Dozen
No. RTD20—XS Triple Plate	$ 9.20	$ 7.50
No. RTD25—XS Quintuple Plate	12.40	10.00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box

TABLE SPOONS

Length 8¼ inches; Bright Finish Bowls

		Per Dozen
No. RTS30—XS Triple Plate	$10 50	$ 8.00
No. RTS35—XS Quintuple Plate	15 00	12 00

Weight per Dozen 2½ lbs

Flat Handles; Four Tines, Bright Finish

MEDIUM FORKS

Length 7⅛ inches

		Per Dozen
No. RTFF75—XS Triple Plate	$10 50	$ 8.50
No. RTFF76—XS Quintuple Plate	15.00	12.00

Weight per Dozen 1½ lbs.

DESSERT FORKS

Length 7 inches

		Per Dozen
No. RTDF77—XS Triple Plate	$ 9.20	$ 7 50
No. RTDF78—XS Quintuple Plate	12 40	10.00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box

SUGAR SHELLS

Length 6 inches

		Per Dozen
No. RTY7—XS Triple Plate, Bright Finish Bowls	$8.80	$8 00

Weight per Dozen 1 lb.

BUTTER KNIVES

Length 7⅛ inches

		Per Dozen
No. RTBK84—XS Triple Plate; Bright Finish Bowls	$12 40	$10 00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box

SHELL SATIN PATTERN

Satin Finish Handles

TEA SPOONS

Length 5⅞ inches; Bright Finish Bowls

		Per Dozen
No. RST10—XS Triple Plate	$5.50	$4.25
No. RST15—XS Quintuple Plate	7.50	6.00

Weight per Dozen 1 lb.

DESSERT SPOONS

Length 7⅛ inches; Bright Finish Bowls

		Per Dozen
No. RSD20—XS Triple Plate	$ 9 20	$ 7.50
No. RSD25—XS Quintuple Plate	12 40	10 00

Weight per Dozen 1¾ lbs.

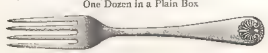
One Dozen in a Plain Box

TABLE SPOONS

Length 8¼ inches; Bright Finish Bowls

		Per Dozen
No. RSS30—XS Triple Plate	$10 50	$ 8.50
No. RSS35—XS Quintuple Plate	15 00	12 00

Weight per Dozen 2½ lbs.



Flat Handles; Four Tines, Bright Finish

MEDIUM FORKS

Length 7⅛ inches

		Per Dozen
No. RSFF75—XS Triple Plate	$10 50	$ 8 50
No. RSFF76—XS Quintuple Plate	15.00	12 00

Weight per Dozen 1½ lbs.

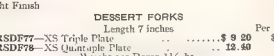
DESSERT FORKS

Length 7 inches

		Per Dozen
No. RSDF77—XS Triple Plate	$ 9 20	$ 7.50
No. RSDF78—XS Quintuple Plate	12.40	10 00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box



SUGAR SHELLS

Length 6 inches

		Per Dozen
No. RSY7—XS Triple Plate; Bright Finish Bowls	$8 80	$8 00

Weight per Dozen 1 lb.

BUTTER KNIVES

Length 7⅛ inches

		Per Dozen
No. RSBK84—XS Triple Plate; Bright Finish Bowls	$12 40	$10 00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box

SILVER PLATED FLAT WARE

WM. ROGERS EAGLE BRAND

Best Quality 18% Nickel Silver Base, Plated with Pure Silver and Warranted in every Respect

Cuts Two Fifths Size

MARKS

Extra Plate, A1

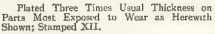
Plated 20% Heavier than the Ordinary Standard.

Stamped as Follows:

Tea Spoons, 2
Dessert Spoons, 3
Table Spoons and Medium Forks, 4

Sectional Plate

Plated Three Times Usual Thickness on Parts Most Exposed to Wear as Herewith Shown; Stamped XII.



Triple Plate

Plated Three Times Usual Thickness Over the Whole Spoon or Fork.

Stamped as Follows:

Tea Spoons, 6
Dessert Spoons, 9
Table Spoons and Medium Forks, 12

CEDRIC PATTERN

French Gray Finish Handles

Cuts Two Fifths Size

TEA SPOONS

Length 5¾ inches; Bright Finish Bowls

		Per Dozen
No. DT10—Extra Plate, 2	$4.00	$4 75
No. DT12—Sectional Plate, XII	5.30	5 50
No. DT15—Triple Plate, 6	6 30	6 50

Weight per Dozen ⅞ lb.

DESSERT SPOONS

Length 7 inches; Bright Finish Bowls

		Per Dozen
No. DD20—Extra Plate, 3	$ 8 20	$8.50
No. DD22—Sectional Plate, XII	9.00	9.50
No. DD25—Triple Plate, 9	10.50	11.00

Weight per Dozen 1⅝ lbs.

One Dozen in a Plain Box

TABLE SPOONS

Length 8 inches, Bright Finish Bowls

		Per Dozen
No. DS30—Extra Plate, 4	$9 00	$ 9 50
No. DS32—Sectional Plate, XII	10 50	11 00
No. DS35—Triple Plate, 12	12 50	13 00

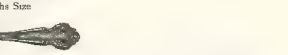
Weight per Dozen 1¾ lbs.

MEDIUM FORKS

Flat Handles; Four Tines, Bright Finish; Length 7½ inches

		Per Dozen
No. DFF75 Extra Plate, 4	$9 00	$9 50
No. DFF75½—Sect'l Plate, XII	$10 50	$11 00
No. DFF76 —Triple Plate, 12	$12 50	$13.00

One Dozen in a Plain Box; Weight per Dozen 1½ lbs.

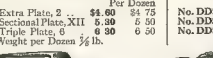


BUTTER KNIVES

Length 7⅜ inches

		Per Dozen
No. DBK84—Extra Plate, 2; Bright Finish Blade	$10.00	$10.50

One Dozen in a Plain Box; Weight per Dozen 1½ lbs.

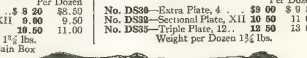


SUGAR SHELLS

Length 6 inches

		Per Dozen
No. DY7—Extra Plate, 2; Bright Finish Bowls	$9.00	$9.50

One Dozen in a Plain Box; Weight per Dozen ⅞ lb.

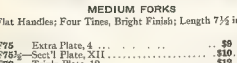


LARGE COLD MEAT FORKS

Length 8½ inches

		Per Dozen
No. DCM79—Extra Plate, 2; Four Tines, Bright Finish	$14.50	$15.00

One in a Fancy Silk Lined Box; Weight per Dozen 4 lbs.



GRAVY LADLES

Length 6¾ inches

		Per Dozen
No. DGL—Extra Plate, 2; Bright Finish Bowls	$17 50	$18.00

One in a Fancy Silk Lined Box; Weight per Dozen 4½ lbs.

BERRY SPOONS

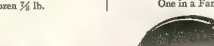
Length 9 inches

		Per Dozen
No. DB8—Extra Plate 2; Bright Finish Bowls	$23 00	$24.00

One in a Fancy Silk Lined Box; Weight per Dozen 6½ lbs.

TIPPED PATTERN

Bright Finish Handles



TEA SPOONS

Length 5¾ inches

		Per Dozen
No. ETT10—Extra Plate, 2; Bright Finish Bowls	$4 10	$4 25
No. ETT12—Sectional Plate, XII; Bright Finish Bowls	4 80	5.00
No. ETT15—Triple Plate, 6; Bright Finish Bowls	5.80	6 00

Weight per Dozen ⅝ lb.

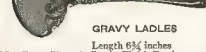
TABLE SPOONS

Length 8 inches

		Per Dozen
No. ETS30—Extra Plate, 4; Bright Finish Bowls	$ 8 20	$ 8 50
No. ETS32—Sectional Plate, XII; Bright Finish Bowls	9 60	10 00
No. ETS35—Triple Plate, 12; Bright Finish Bowls	11.50	12.00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box



MEDIUM FORKS

Flat Handles; Four Tines, Bright Finish; Length 7½ inches

		Per Dozen
No. ETFF75 —Extra Plate, 4	$8.20	$8 50
No. ETFF75½—Sectional Plate, XII	$9 60	$10 00
No. ETFF76 —Triple Plate, 12	$11.50	$12.00

One Dozen in a Plain Box; Weight per Dozen 1½ lbs.

"DIAMOND EDGE IS A QUALITY PLEDGE"

✣LATHES

BARNES—WOOD TURNING

WITH BENCH LEGS

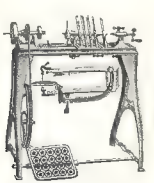
Hardwood Bed; Cast Iron Legs, Slide Rests, Pulleys and Hand Wheels; Steel Face Plate, Axles and Bolts Will Take Stuff 12 inches in Diameter and 3 feet Long. Speed can be Varied from 1000 to 2000 Revolutions per Minute.

Each

No. B3—Bed 54x4 inches; Size of Pulley 6x2 inches; One Slide Rest Each 9 inch and 5 inch; Height Over All 16¼ inches; Diameter of Face Plate 4½ inches; Weight Boxed 75 lbs..... $33 00 $39 00

One in a Case

GOODELL



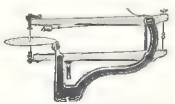
✣GOODELL LATHES

Japanned Cast Iron Frame, Drive Wheel, Treadle, Slide Rests and Heads; Cast Steel, Machined Face Bed, Steel Axles and Shafts; Nickel Plated Table, Lathe Rests, Chuck Spindle and Crank. The Drive Wheel has Two Grooves of Varying Depths on Face to Give Change of Speed; The Lathe Head has 2 inch Face Plate, a Spur Center, and Screw Center for Turning Cups and a Drill Chuck to Hold Round Taper Drills up to ¾ inch; the Tail Stock has Screw Feed Center which can be Secured at any Point Desired by a Clamping Device; Provided with a Long and Short Tool Rest, 5 Turning Tools, a Wrench, Drill Points, etc.; Fitted with 4½x¾ inch Emery Wheel, Drl. Spindle and Chuck.

Each

No. G1—Length of Bed 24 inches; Distance Between Centers 13 ½ inches; Swing of Lathe 5 inches, Diameter of Drive Wheel 12½ inches; Round Leather Belt ⅜ inch; Height Over All 24 inches, Floor Space Required 28x16 inches, Weight Boxed 70 lbs..... $17 00 $10 00

One in a Case



✣SCROLL SAW ATTACHMENTS

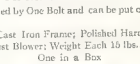
For No. G1 Goodell Lathe

Secured to Lathe Bed by One Bolt and can be put on or off at Pleasure

Each

No. 2A—Japanned Cast Iron Frame; Polished Hardwood Arms; Automatic Dust Blower; Weight Each 15 lbs..... $2 60 $1.50

One in a Box



✣CIRCULAR SAW ATTACHMENT

For No. G1 Goodell Lathe

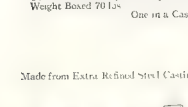
Each

No. 3A—Cast Iron Table, Japanned Bottom, Machined Surface 6x7 inches, High Grade Tempered Steel Circular Saw 3 inch Diameter, Weight 1 lb..... $2 20 $1.00

One in a Box

LATHE DOGS

Made from Extra Refined Steel Castings, and are Provided with U. S. Standard Steel Screws with Hardened Points; Natural Finish



Each

No. 1 OPENING ¾ Inches; Weight 2½ lbs..... $0 40
No. 2 OPENING 1 Inches; Weight 3 lbs..... 50
No. 3 OPENING 1¼ Inches; Weight 3½ lbs..... 55
No. 4 OPENING 1½ Inches; Weight 4 lbs..... 60
No. 5 OPENING 1¾ Inches; Weight 5 lbs..... 60
No. 6 OPENING 2 Inches; Weight 5½ lbs..... 60
No. 7 OPENING 2¼ Inches; Weight 6 lbs..... 70
No. 8 OPENING 2½ Inches; Weight 7½ lbs..... 80
No. 9 OPENING 2¾ Inches; Weight 15¾ lbs..... 80
No. 10 OPENING 3 Inches; Weight 18¾ lbs..... 90
No. 11 OPENING 3½ Inches; Weight 24 lbs..... 1 00
No. 12 OPENING 4 Inches; Weight 26½ lbs.....

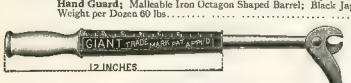
Loose

NAIL PULLERS

*DIAMOND EDGE

Per Dozen

No. DE100—Length 18⅛ inches; Stroke 5¼ inches; Size of Shank ¾ inch; Forged and Tempered Polished Steel Jaws and Shank; **With Hand Guard;** Malleable Iron Octagon Shaped Barrel; Black Japanned Grip; Red Japanned, Gilt Trimmed Body; Gilt Letters. Weight per Dozen 60 lbs. $23 00



GENUINE GIANT

GIANT PATTERN

Per Dozen

No. G1—Length 18 inches; Stroke 5½ inches; Black Japanned Malleable Iron Barrel with White Enameled Grip; Polished Swedish Steel Shank and Foot; ¾ inch Shank; Weight per Dozen 60 lbs. $24 00

Per Dozen

No. 100—Length 18 inches; Stroke 5 inches; Black Japanned Malleable Iron Barrel and Grip; Polished Steel Shank and Tempered Jaw; Weight per Dozen 60 lbs. $16.00

Loose

BOX OR CRATE OPENERS

Used by Commission and Produce Merchants, In Wholesale and Retail Stores and for General Household Purposes

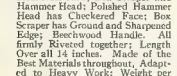
*DIAMOND EDGE Per Dozen

No. DE85—Heavy Forged and Tempered Steel Nail Claw, Box Scraper and Hammer Head; Polished Hammer Head has Checkered Face; Box Scraper has Ground and Sharpened Edge; Beechwood Handle. All firmly Riveted together; Length Over all 14 inches. Made of the Best Materials throughout, Adapted to Heavy Work; Weight per Dozen 25 lbs $14 30

*DIAMOND EDGE Per Dozen

No. DE75—**Nickel Plated** and Polished; Forged Steel, One Piece Head and Handle, Tempered Claw and Faces; One Checked and One Smooth Face; Length 9¼ inches; Head 3x¾ inch; Weight per Dozen 12 lbs. $11 50

Half Dozen in a Box



*DIAMOND EDGE Per Dozen

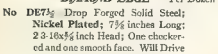
No DE7½ Drop Forged Solid Steel; **Nickel Plated;** 7½ inches Long; 2 2-16x¾ inch Head; One checkered and one smooth face. Will Drive or Draw any Kind of Nail; Unexcelled for Opening Crates and Boxes; Weight per Dozen 18 lbs. $9.90

Twelfth Dozen in a Box

*DIAMOND EDGE Per Dozen

No. DE14—14 inch **Plain Finish** Forged Steel; for Prying Open Boxes and Crates, and Drawing Nails; Blade can be Sharpened for Use as a Chisel; Weight per Dozen 14 lbs.. $8.80

Half Dozen in a Box



Per Dozen

No. DE 25—½ inch Octagon Tool Steel; Length 10⅝ inches; one end Goose Neck with Nail Notch; One end Bent Chisel Point; Black Finish Body; Polished Ends; Weight per dozen 10 lbs $4 50

Half Dozen in a Package

SHIP OR BLOCK SCRAPERS

Used as Deck, Box or Butchers' Block Scraper Per Dozen

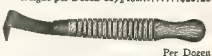
No 8—Three 5 inch Cutting Edges; Triangular Tool Steel Tempered Blade; 16 inches Long; 3 inch Cast Iron Heavy Ferrule; Natural Finish Blade; Blade Held by Heavy Cap Screw; Ferrule Held by Screw; Weight per Dozen 19 lbs. $14.60

Loose

BOX SCRAPERS

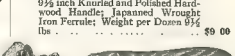
Per Dozen

No. 74—4¾ inch Curved, Forged Tool Steel Blade, 1½ inches Wide; 6½ inch Polished Hardwood Handles; Tangs Extend Through Handle, and are Riveted Over Washers at the Ends; Brass Ferrules; Tangs and inside of Blade, Oil Finish; Outside Polished; Length Over All 7½ inches; Weight per Dozen 10½ lbs. $10.20



Per Dozen

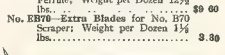
No. 72—2¾ inch Forged Tool Steel Blade and Shank; Tempered Cutting Edge; Polished Face; Japanned Shank and Inside of Blade; 12⅝ inches Long; 9⅛ inch Knurled and Polished Hardwood Handles; Japanned Wrought Iron Ferrule; Weight per Dozen 9½ lbs $9 00



BAILEY Per Dozen

No. B70—2 inch Polished Cast Steel Adjustable Blade, 13 inches Long; 8 inch Polished Hardwood Handle; Japanned Head and Shank; Brass Ferrule; Weight per Dozen 12½ lbs. $9 60

No. EB70—**Extra Blades** for No. B70 Scraper; Weight per Dozen 1½ lbs. 3.30



Per Dozen

No. 70—Triangular, Tool Steel Tempered Blade; Three 3¾ inch Cutting Edges; 13¾ inches Long; 7-16 inch Shank; 9 inch Beech Handle; Wrought Iron Ferrule; Weight per Dozen 10½ lbs. $7.80

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

PIECED TINWARE

Sizes Given on Tinware are Manufacturers' Standard Measurements.

MINE LA MOTTE

With Inset and Pie Tray

IC Tin; Self Locking Steel Wire Bail; Black Enameled Wood Grip

	Per Dozen
No. 73—3 Quarts; Size 6½x7¼ in.; Weight per Doz. 19 lbs.	**$6 60**

Twelve Dozen in a Case, Weight per Case 300 Lbs

MINERS' DINNER BUCKETS

ROUND

With Inset Only

IC Tin; Self Locking Steel Wire Bail; Black Enameled Wood Grip

Nos.	104	105	106
Qts.	1	2	3
Size, Inches	[illegible]	7¼x8	7¼x9
Weight Doz. Lbs.	14½	19½	21
Dozen in Case	12	12	6
Weight Case, Lbs	275	310	190
Per Dozen	$4 20	4 80	5 40

LARD CANS

IC Tin, Swaged Body; Seamless Tin Cover, Rimmed to fit Inside; Drop Side Handles

Nos.	14	16	18	20
Gallons	4	6	8	10
Capacity, Lbs	30	50	60	80
Size, Inches	10½x11½	11½x13½	12x15	13x18½
Weight per Doz. Lbs.	24	30	36	44
Per Dozen	$5 20	6 80	7 80	9 20

Loose

Per Crate

No 6810 Crate Contains **18 Cans,** One Half Dozen Each, Nos. 16, 18 and 20, Nested; Weight per Crate 72 lbs ... $10 50

SYRUP CANS

IX Tin; Soldered; 1 inch, Cork Lined Screw; Large Oval Wire Handle.

	Per Dozen
No. 1—Capacity 1 Gallon, Size 7½x9¾ inches; Weight per Dozen 18½ lbs	**$3 50**

Fifty in a Crate

SQUARE

IX Tin; Soldered; 1 inch, Cork Lined Screw, Large Oval Wire Handle

	Per Dozen
No. 11—Capacity 1 Gallon; Size 3¾x6x10¾ inches; Weight per Dozen 16½ lbs	**$7 00**

Fifty in a Crate

SELF SEALING

IX Tin; Soldered; Friction Top; Wire Bail, Large Opening for Filling. Pack Conveniently for Shipping

Nos	50	100
Gallons	½	1
Size, Inches	6x8¾	6¼x7¾
Weight Dozen, Lbs.	18	24
Per Dozen	$3 20	$3 50

Fifty in a Crate

POWDER CANS

IC Tin; Loose Cup; Flat Handle.

Nos.	2	4
Quarts	2	4
Pounds	5	12½
Size, Inches	4¾x10½	6¾x11
Wt. Doz., Lbs.	7½	10½
Per Dozen	$3.00	4.80

Loose

GOVERNMENT CANTEENS

IX Tin, Flannel Covered, Cork Stopper; Brass Chain, Web Strap

	Per Dozen
No. 8—2 Quarts; Size 8x2¼ inches; Weight per Dozen 7½ lbs.	**$9.00**

Loose

MINERS' CANTEENS

IX Tin, Flannel Covered; Tin Screw Cap; Web Strap.

Nos.	32	33	34
Quarts	2	3	4
Width, Inches	6¾	7¾	9¼
Diam. Inches	3½	3½	4½
Wt. Doz., Lbs	7½	9	10½
Per Dozen	$7 50	10.00	11 00

Loose

MINERS' OIL CANTEENS

IC Tin; Screw Cap; Steel Strap Loops, Soldered on

	Per Dozen
No. 41—1 Pint; Size 4¾x11 inches; Weight per Dozen 8½ lbs	**$9.10**

Loose

MACHINISTS VISES

STANDARD

Parallel Solid Jaws, Welded Steel, Hardened and Polished Faces; Japanned Cast Iron Body; with Polished Slide Bar and Screw Head; Polished Wrought Steel Sliding Handle Bar.

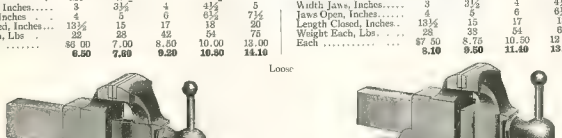
STATIONARY BASE

Nos.	M3	M3½	M4	M4½	M5
Width Jaws, Inches	3	3½	4	4½	5
Jaws Open, Inches	4	5	6	6½	7½
Length Closed, Inches	13½	15	17	18	20
Weight Each, Lbs	22	28	42	54	76
Each	6.00	7.00	8.50	10.00	12.00
	6.50	**7.50**	**9.20**	**10.80**	**14.10**

SWIVEL BASE

Nos.	M13	M13½	M14	M14½	M15
Width Jaws, Inches	3	3½	4	4½	5
Jaws Open, Inches	4	5	6	6½	7½
Length Closed, Inches	13½	15	17	18	20
Weight Each, Lbs	28	38	54	69	90
Each	$7 50	8.75	10.50	12 50	16.00
	8.10	**9.50**	**11.40**	**13.50**	**17.30**

Loose



✣ PRENTISS BULL DOG

Parallel Solid Jaws, Welded Steel, Hardened and Milled Faces; Japanned Cast Iron Body; Polished Jaws with Polished Slide Bar and Screw Head; Polished Wrought Steel Sliding Handle Bar

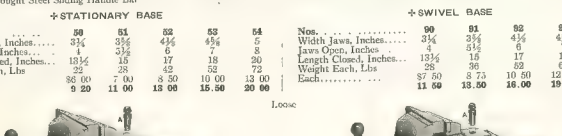
✣ STATIONARY BASE

Nos.	50	51	52	53	54
Width Jaws, Inches	3¼	3⅝	4⅛	4⅝	5
Jaws Open, Inches	4	5½	6	7	8
Length Closed, Inches	13½	15	17	18	20
Weight Each, Lbs	22	28	42	52	72
Each	6 00	7 00	8 50	10 00	13 00
	9 20	**11 00**	**13 00**	**15.50**	**20 00**

✣ SWIVEL BASE

Nos.	90	91	92	93	94
Width Jaws, Inches	3¼	3⅝	4⅛	4⅝	5
Jaws Open, Inches	4	5½	6	7	8
Length Closed, Inches	13½	15	17	18	20
Weight Each, Lbs	26	36	52	64	85
Each	$7 50	8 75	10 50	12 50	16 00
	11 50	**13.50**	**16.00**	**19.00**	**25 00**

Loose



✣ PRENTISS MACHINISTS

Parallel Self-adjusting Jaws: Welded Steel Faces; Japanned Cast Iron Body; Polished Jaws and Slide Bar; Rear Jaw is Self-adjusting to Hold Odd Shaped Surfaces, but can be Made Stationary by Inserting Steel Pin Marked "A" in Illustrations Above.

✣ STATIONARY BASE

Nos.	1	2	2½	3	4	5	6
Width Jaws, Inches	2⅝	3¼	4	4¼	5¼	6	7
Jaws Open, Inches	3½	4⅝	5¼	6	8	9	11
Length Closed, Inches	12½	15½	17¾	19	24	28	31
Weight Each, Lbs	13½	28	41	54	96	146	184
Each	$5 50	7 00	9 00	10 50	17 00	24 00	30 00
	10 00	**13 00**	**16 50**	**19 50**	**31 50**	**44 00**	**55 00**

✣ SWIVEL BASE

Nos.	18	19	19½	20	21	23	26
Width Jaws, Inches	2⅝	3¼	4	4⅝	5¼	6	7
Jaws Open, Inches	3½	4⅝	5¼	6	8	9	11
Length Closed, Inches	12½	15½	17¾	19	24	28	31
Weight Each Lbs	17	32	48	65	109	168	207
Each	$6 75	8 50	10 50	12 50	19 00	27 00	35 00
	12 50	**15 50**	**19 50**	**23 00**	**36 00**	**50 00**	**65.00**

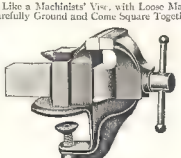
Loose

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

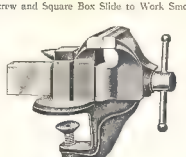
"DIAMOND EDGE IS A QUALITY PLEDGE"

JERSEY BENCH VISES

Fitted Just Like a Machinists' Vise, with Loose Malleable Iron Nut, which Causes the Screw and Square Box Slide to Work Smooth and Easy, the Jaws are Carefully Ground and Come Square Together on the Face.



Brown Japanned Cast Iron Body; Polished Jaws, Screw and Screw Lug; Steel Sliding Bar



STATIONARY BOTTOM
To Clamp

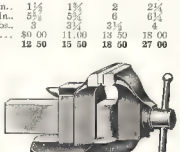
PLAIN IRON JAWS

Nos.	B40	B42	B44	B46	B48	B52
Width of Jaws, In..	1¼	1¾	2	2¼	2½	3
Length Closed, In..	5¾	5¾	6	6¼	7	8¾
Weight Each, Lbs..	3	3½	3½	4	5	8½
Per Dozen.....	$9 00	11 00	13 50	18 00	21 00	28 50
	12 50	15 50	18 50	27 00	29 00	40 00

Loose

STEEL FACED JAWS, WELDED

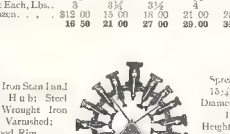
Nos.	B61	B63	B65	B67	B69	B53
Width of Jaws, In..	1¼	1¾	2	2¼	2½	3
Length Closed, In..	5¾	5¾	6	6¼	7	8¾
Weight Each, Lbs..	3	3½	3½	4	5	8½
Per Dozen....	$12 00	15 00	18 00	21 00	25 00	34 50
	16 50	21 00	27 00	29.00	34 50	48 00



SWIVEL BASE; STEEL FACED JAWS

Nos.	B56	B57	B58	B59	B61
Width of Jaws, Inches.....	1¾	2	2¼	2½	3
Length Closed, Inches.....	5¾	8¾	6¼	7	8¾
Weight Each, Lbs.....	3	3½	4½	5½	9½
Per Dozen.....	$15.00	18.00	22.80	28.00	37.50
	21 00	27 00	33.00	38.00	52.00

Cast Iron Standard Wheel Hub; Steel Axle, Wrought Iron Spokes Varnished; Hardwood Rim

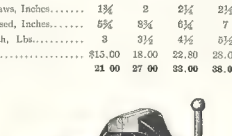


Spread at Base 15½x18 Inches
Diameter of Wheel 15 Inches
Height to Top of Wheel 21 Inches

ASSORTMENTS; WITH DISPLAY STAND

				Per Assortment
No. B10—13 Vises and Stand; Weight 85 lbs.				**$36 00**
3 No. B40	3 No. B42	3 No. B44	2 No. B56	1 No. B57
2 No. B48	1 No. B49	1 No. B52	1 No. B56	1 No. B58
No. X12—24 Vises and Stand, Weight 118 lbs.				**51.00**
4 No. B40	4 No. B42	1 No. B43	3 No. B44	1 No. B56
2 No. B46	2 No. B47	2 No. B48	1 No. B49	1 No. B52
1 No. B53	1 No. B58	1 No. B61		

Loose

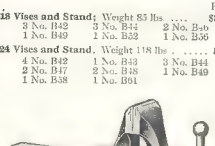


SHEPARD STATIONARY

Japanned Cast Iron Body, Welded Steel Face, Parallel Jaws; Polished Steel Screw and Sliding Handle; Polished Jaws and Slide; Used as Stationary or Swivel Bottom Vise; Equipped with Central Bolt, Nut and Washer for Fastening to Bench; also Provided with Bolt Holes for Permanently Securing to Bench.

Nos.	160	161	161½	162	163
Width of Jaws, Inches.....	2	2½	3	3½	4
Jaws Open, Inches.....	2	3	3½	4	5
Length Closed, Inches....	8	9½	11⅜	11⅜	15
Weight Each, Lbs.....	4	10	12	16	30
Each.....	$1.50	2.00	2.40	2 75	4 00
	2.70	3 40	4 20	4 50	7 20

Loose



PRENTISS "BULL DOG" WOOD WORKERS STATIONARY

Japanned Cast Iron Body; Welded Steel Faced Parallel Jaws, Polished Steel Screws and Sliding Handle; Polished Jaws and Slide

Designed for Use of Carriage and Wagon Makers, Pattern Makers and Wood Workers Generally.

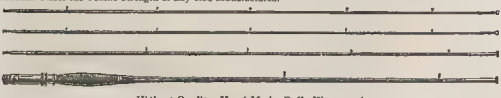
No.	59
Width of Jaws, Inches	4½
Jaws Open, Inches	5
Length Closed, Inches	13½
Weight Each, Lbs.	48
Each	$ 9 50
	12.00

"DIAMOND EDGE IS A QUALITY PLEDGE"

FISHING RODS

*HINDUVINE FLY

Hinduvine Derives its Name from a Fibrous Vine, Native only to Hindoostan, and has the Strongest, Toughest, and at the Same Time the most Elastic Fiber ever put in a Fishing Rod. The Fibers are as Hard as Steel and Possess the Suppleness of Whalebone; Great Care is Taken in Splitting so as not to make any Traverse Cuts which would Destroy the Elasticity and Weaken the Rod. Each Joint is made of Six Strips, Cemented Together in the Same Manner as a Split Bamboo Rod. Each Section is Tested and Guaranteed Absolutely Perfect, and the Strongest of any on the Market. **For Strength, Toughness and Pliability, Hinduvine cannot be Excelled.** Actual Tests have Proven Hinduvine Rods to Possess Two and One Half Times the Tensile Strength of any Rod Manufactured.



Highest Quality, Hand Made, Fully Warranted

Per Dozen

No. 11SF—Three Piece and Extra Tip; Cork Grip; German Silver Reel Seat, Ferrules and Mountings; all Metal Parts Nicely Milled, Finished and Polished. Solid Reel Plate below Grip; Watertight Reinforced Ferrules; **English Snake Guides,** One Ring Fly Tip; Metal Plugs; Wound with Scarlet Silk at Close Intervals and Varnished with Best Quality Transparent Spar Varnish. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 14 lbs. $346 00

Per Dozen

No. 8SF—Three Piece and Extra Tip; Cork Grip; German Silver Reel Seat, Ferrules and Mountings; all Metal Parts Nicely Milled, Finished and Polished. Solid Reel Plate below Grip; Watertight Reinforced Ferrules; **English Snake Guides,** One Ring Fly Tip; Metal Plugs; Wound with Scarlet and Yellow Silk at Close Intervals and Varnished with Best Quality Spar Varnish. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 12 lbs. $130 00

Per Dozen

No. 7SF—Three Piece and Extra Tip; Cork Grip; German Silver Reel Seat, Ferrules and Mountings; all Nicely Nickel Plated and Polished; all Metal Parts Nicely Milled; Solid Reel Plate below Grip; Watertight Reinforced Ferrules; **English Snake Guides,** One Ring Fly Tip; Metal Plugs; Wound with Scarlet, Black and Green Silk at Intervals and Varnished with Transparent Varnish. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 13 lbs $93 00

Twelfth Dozen in Velvet Covered Grooved Wood Form and Cloth Bag

SPLIT BAMBOO FLY

*DIAMOND BRAND

Per Dozen

No. 6SF—Three Piece and Extra Tip, Milk White, Scored Celluloid Grip; Brass Reel Seat, Ferrules and Mountings; all Nickel Plated; all Metal Parts Milled; Solid Reel Plate below Grip; Watertight Reinforced Ferrules, **English Snake Guides;** One Ring Fly Tip, Metal Plugs; Wound with Old Gold and Black Silk at Intervals and Varnished with Transparent Varnish. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 11 lbs. $72 00

Per Dozen

No. 5SF—Three Piece and Extra Tip; Cork Grip; Brass Reel Seat Ferrules and Mountings, all Nickel Plated and Polished; all Metal Parts Plain; Solid Reel Plate below Grip; Watertight Reinforced Ferrules; **English Snake Guides;** One Ring Fly Tip; Metal Plugs; Wound with Black and Dark Green Silk in Clusters; Varnished with Transparent Varnish. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 11½ lbs. $65 00

Twelfth Dozen in Flannel Covered Grooved Wood Form and Cloth Bag

"DIAMOND EDGE IS A QUALITY PLEDGE"

FISHING RODS

*DIAMOND BRAND

SPLIT BAMBOO FLY

Per Dozen

No. 4SF—Three Piece and Extra Tip; Cork Grip; Brass Reel Seat, Ferrules and Mountings all Nickel Plated and Polished; all Metal Parts Plain; Solid Reel Plate Below Grip; Watertight Reinforced Ferrules, **English Snake Guides,** One Ring Fly Tip; Metal Plugs; Wound with Red, Black and Green Silk at Intervals. Finished with Transparent Varnish. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 12 lbs..... **$43.00**

Per Dozen

No. 3SF—Three Piece and Extra Tip; Cork Grip; Brass Reel Seat, Ferrules and Mountings all Nickel Plated and Polished; all Metal Parts Plain; Solid Reel Plate Below Grip; Watertight Reinforced Ferrules; **English Snake Guides,** One Ring Fly Tip; Metal Plugs; Wound with Red and Green Silk at Intervals. Varnished. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 11 lbs..... **$36.00**

Per Dozen

No. 2SF—Three Piece and Extra Tip; Cork Grip; Brass Reel Seat, Ferrules and Mountings Nickel Plated and Polished; all Metal Parts Plain; Solid Reel Plate Below Grip; Plain Ferrules; **Ring Guides,** One Ring Fly Tip; Metal Plugs; Wound with Red and Purple Silk in Clusters. Varnished. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 11¾ lbs..... **$32.50**

Twelfth Dozen in Flannel Covered Grooved Wood Form and Cloth Bag

Per Dozen

No. 1SF—Three Piece and Extra Tip; Cork Grip; Brass Reel Seat, Ferrules and Mountings Nickel Plated and Polished; all Metal Parts Plain; Solid Reel Plate Below Grip; Plain Ferrules; **Ring Guides,** One Ring Fly Tip; Metal Plugs; Wound with Red and Green Silk in Clusters. Varnished. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 11 lbs..... **$17.50**

Per Dozen

No. 0SF—Three Piece and Extra Tip; Short Cork Grip; Brass Reel Seat, Ferrules and Mountings Nickel Plated and Polished; all Metal Parts Plain, Solid Reel Plate Below Grip; Plain Ferrules; **Ring Guides,** One Ring Fly Tip; Metal Plugs; Wound with Narrow Red and Green Silk Clusters at Intervals. Varnished. Lengths 9 to 10½ feet; Weights 6 to 7½ ozs.; Weight per Dozen 10½ lbs..... **$14.50**

Twelfth Dozen in Plain Grooved Wood Form and Cloth Bag

EXTRA FLY ROD TIPS

Per Dozen

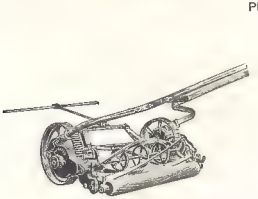
No. ETF1—For No. 1SF Rods; Assorted Lengths 3 to 3½ Feet; Average Weight per Dozen 6 ozs... ..... **$8.50**

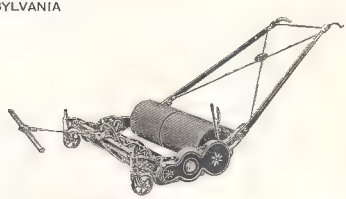
Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

HORSE AND PONY LAWN MOWERS

PENNSYLVANIA





Painted Green and Red with Gold Bronze Striping

High Grade Cast Iron Frame, Drive Wheels and Gear Castings; Malleable Iron Reel Braces; Crucible Tool Steel, Oil Tempered Revolving Reel Blades, and adjustable Bed Knife; Full Braced Steel Handles.

PONY OR TWO MAN

For use of Pony or Two Men on Large Lawns and where the Surface is Broken by Walks and Shrubbery or is too Hilly for Regular Horse Mower. Triple Geared on both Sides, 11 inch Drive Wheels; ⅝ inch Steel Axle; 1 inch Tubular Front Bar; Upturned Bed Knife, with Front Draft Attachment for Pony or Horse. Adjustable to Cut Grass to Lengths of 1½ to 2 inches

Four Reel Blades

		Each
No. 25—Width of Cut 25 inches; Diameter of Reel 6¾ inches; Extreme Width 35 inches; Weight Boxed about 150 lbs.	**$72.00**	50.00

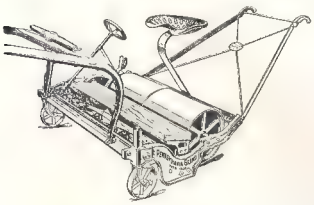
✣HORSE MOWERS

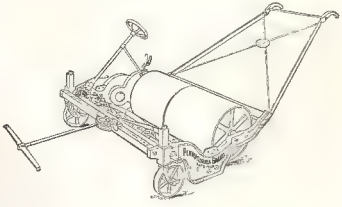
Triple Geared on One Side Only; Diameter of Reel 11¾ inches; Double Cast Iron Rollers 11¾ inches in Diameter; Cast Iron Guide Rollers 4¾ inches in Diameter; Malleable Iron Cross Bar for Draft Iron 52½ inches long; Wrought Iron Stem for Draft Iron 21½ inches long; U Steel Draft Iron with Lever for throwing Blades out of Gear.

Four Reel Blades

Nos.	✣30	✣38
Width of Cut, Inches	30	38
Extreme Width, Inches	37	44
Length of Roller, Inches	26	34½
Weight Boxed, Lbs.	360	370
Each	$100.00	130.00
	160.00	**206.00**
Extra With Seat and Side Draft Shaft add	**32.00**	20.00

One in a Crate





PENNSYLVANIA GRAND

Aluminum and Gold Bronze Finish

Heavy Cast Iron Frame, Malleable Iron Reel Braces, Front Bar, Adjusting Levers, Caster Stems and Cylinder Ends; Crucible Tool Steel, Oil Tempered Self Sharpening Blades; Cast Steel Pinions; Wrought Steel Handles, Draft Stem and Adjusting Wheel Post; Cast Iron Seat; Spring Steel Seat Support; all Journal Boxes are Phosphor Bronze Bushed. The Cylinder runs in Self-Adjusting Floating Journals with Spiral Gears, which is Self-Aligning and Distributes the Wear on Blades Evenly. The Blades are thrown in or out of Gear by the Lever at side of Machine; the Height of Cut is controlled by the Hand Wheel and can be Changed, while Machine is in Motion, to any Length from ⅝ inch to 2⅞ inches.

Diameter of Reel 7¼ inches; Diameter of Cylinder 15 inches

With Shafts, Seat and Handles

With Wood Foot Rest 9 in. Wide

Nos.	GC304	✣GC306	GC384	✣GC386
Width Cut, Inches	30	30	38	38
Number of Reel Blades	4	6	4	6
Extreme Width, Inches	41	41	49	49
Weight Crated, Lbs.	635	645	720	740
Each	$180.00	132.50	150.00	162.50
	200.00	**220.00**	**252.00**	**276.00**

With Draft Irons and Handles Only

Width of Cut 30 inches

Nos.	G304	✣G306
Number of Reel Blades	4	6
Extreme Width, Inches	41	49
Weight Crated, Lbs.	595	695
Each	$100.00	112.50
	166.00	**184.00**

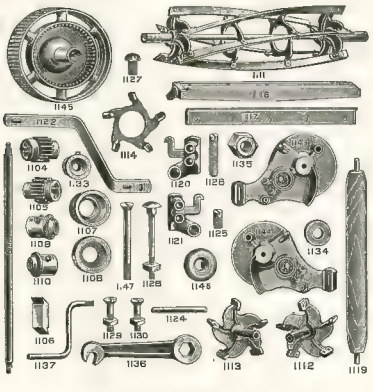
One in a Crate

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

✠LAWN MOWER PARTS

*DIAMOND EDGE



PRICE LIST OF EXTRAS

Instructions for Ordering

1st—Give Number and Description of Part

2nd—Always Give Name and Size of Machine

Nos.	Name	Weight	Each
1101	Same as No. 1143	3¼ lbs.	$4 50
1102	Same as No. 1144	3½ lbs.	4 50
1103	Same as No. 1145	7 lbs	2 90
1104	L. H. Pinion, 13-16 inch Hole	5 ozs.	60
1105	R. H. Pinion, 13-16 inch Hole.	5 ozs	60
1106	Steel Pawl	1 oz	14
1107	Ball Cup, Without Balls	3 ozs.	48
1108	Dust Cap for Ball Cup	1 oz	24
1109	L. H. Cone	4 ozs.	90
1110	R. H Cone	4 ozs.	90
1112	L. H. Cylinder Head	19 ozs	2 80
1113	R. H. Cylinder Head	19 ozs	2 80
1114	Cylinder Ring	9 ozs.	2 68
1120	L. H. Roller Bracket	7 ozs.	38
1121	R. H. Roller Bracket	7 ozs.	.38
1123	Wood Handle	3¼ lbs	1 80
1124	Steel Pin for Cone, ⅜x1¼ inch	1 oz	10
1125	Steel Set Screw for Cone, 5-16x9-16	1 oz	10
1126	Set Screw for Bed Plate, 5-16x1¼	1 oz	06
1127	Machine Screw for Spiral Blade	1 oz	$0 10
1128	Bolt for Handle Braces, ¼x3	2 ozs	16
1129	Bolt for Cast Back, ¼x1½	1 oz.	06
1130	Bolt for Roller Bracket, ¼x1¼	1 oz.	06
1133	Washer for Bed Plate, ⅜	1 oz.	.06
1134	Washer for Roller or Handle Bolt	1 oz.	06
1135	Nut for End of Shaft	1 oz.	06
1136	Wrench	6 ozs	24
1137	Sharpening Crank	4 ozs	24
1138	Balls and Retainer for One Cup	2 ozs	68
1139	Rivets for Cyl. Knives	1 oz	06
1140	Roller Pins	3 ozs	16
1145	L. H Side Plate, with Cup	3¼ lbs	4 50
1144	R. H Side Plate, with Cup	3¼ lbs.	4 50
1145	Driving Wheel, Both Alike	7 lbs.	2 90
1146	Washer for Wheel Bearing	1 oz	06
1147	Bolt for Wheel Bearing, 5-16x3	2 ozs	24
1148	Steel Stud for Side Plate	7 ozs	90

	15 inch		17 inch		19 inch		21 inch	
Nos. Name	Weight	Each	Weight	Each	Weight	Each	Weight	Each
1111—Reel Complete, 5 Knives	7¾ lbs.	$13 50	8¼ lbs.	$13.50	9 lbs.	$14 50	11 lbs.	$16 00
1115—Spiral Blade for Reel	9 ozs.	1.90	10 ozs.	2.20	12 ozs.	2.30	1 lb.	2.50
1116—Bed Plate for Cutter Bar	3½ lbs.	2.50	4 lbs.	2.80	4½ lbs.	3 00	5¼ lbs.	3 20
1117—Blade for Cutter Bar	1½ lbs.	1 80	1¾ lbs.	2.00	1¾ lbs.	2.20	1½ lbs.	2.40
1118—Shaft	2½ lbs.	1.40	2¾ lbs.	1.70	2¾ lbs.	1.90	2½ lbs.	2.20
1119—Wood Roller	1¾ lbs.	1 20	1¾ lbs.	1.30	1½ lbs.	1.40	1⅝ lbs.	1 50
1122—Handle Brace	1¼ lbs.	.68	1½ lbs.	.80	1½ lbs.	.90	1½ lbs.	1 10

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

†LAWN MOWER PARTS

*RUGBY—MODEL 1912

No. 560-9

No. 61—Right

No. 62—Left

No. B5—Right
No. B6—Left

Steel Pawl

Reel Complete

No. 1

No. 27

No. 2

No. 4

Cutter Bar Complete with Steel Blade

No. L. W.

Wood Roller

Handle Brace

PRICE LIST OF REPAIRS

Instructions for Ordering

1st—Give Number and Description of Part. **2d**—Always Give Name and Size of Machine.

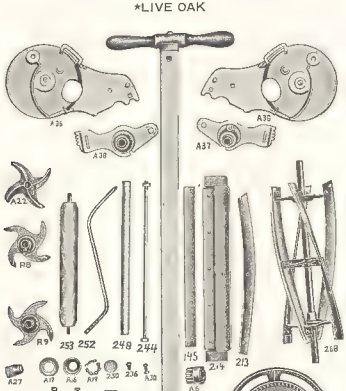
Nos.	Name	Weight	Each
530-9	—Drive Wheels, both alike	5½ lbs.	**$1 40**
61	—R. H. Side Plate	3¾ lbs.	**1 40**
62	—L. H Side Plate	3¾ lbs.	**1 40**
B5	—R. H. Pinion	3½ ozs.	**.35**
B6	—L. H. Pinion	3½ ozs.	**.35**
4	—Roller Brackets	4¼ ozs.	**.30**
LW	—Wheel Washer	1 oz.	**.15**
113	—Wrench	3 ozs.	**.15**
2	—Cones, both alike	1 oz.	**.65**
S4	—Springs, both alike, for Ball Bearing Device	1 oz.	**.30**
27	—Ball Retainer, without Balls	1 oz.	**.30**
1	—Ball Cup	1 oz.	**.60**
RW	—Upper Handle Cap	1 oz.	**.15**
W	—Lower Handle Cap	3 ozs.	**.30**
547	—R. H. and L. H. Reel Braces	7 ozs.	**.60**
548	—Center Reel Braces	6 ozs.	**.60**
Steel Balls		⅜ oz. per Doz.	**.60**
Steel Pawls, both alike		½ ozs.	**.10**
Wood Handle Complete		8 lbs.	**.10**
Handle Grip Joint Bolt, with Nut		2¼ ozs.	**.10**
Handle Brace Bolt, with Nut		1¼ ozs.	**.10**
Wheel Bolt, with Nut		1 oz.	**.10**
Roller Bracket Bolt, with Nut		1 oz.	**.10**
Cutter Bar Adjusting Screw		1 oz.	**.10**
Cutter Bar Pivotal Screw		1 oz.	**.10**
Nut for End of Shrub Rod		1 oz.	**.10**
Rivets, all alike		¼ oz.	**.10**
Babbitt Castings, both alike for Ball Bearing Device		1 oz.	**.30**
Pins, both alike for Ball Bearing Device		1 oz.	**.10**

	14 inch		16 inch		18 inch		20 inch	
	Weight	Each	Weight	Each	Weight	Each	Weight	Each
Cutter Bar Complete	3 lbs.	**$0 25**	3½ lbs.	**$1.00**	4 lbs.	**$1.20**	4½ lbs.	**$1 40**
Cutter Bar Blade	10 ozs.	**.45**	12 ozs.	**.50**	14 ozs.	**.60**	1 lb.	**.70**
Spiral Blade	10 ozs.	**.30**	12 ozs.	**.45**	14 ozs.	**.50**	1 lb.	**.60**
Reel Complete	4½ lbs.	**2.10**	5½ lbs.	**2.10**	6 lbs	**2.10**	6½ lbs.	**2.10**
Shrub Rod	1½ lbs.	**.70**	1¾ lbs.	**.70**	2 lbs.	**.70**	2½ lbs.	**.70**
Handle Brace	14 ozs.	**.25**	1 lbs.	**.25**	1¼ lbs.	**.25**	1½ lbs.	**.25**
Wood Roller	3 lbs.	**.60**	2½ lbs.	**.60**	2¾ lbs.	**.60**	3 lbs.	**.60**

Items Marked † Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

✠LAWN MOWER PARTS

*LIVE OAK



PRICE LIST OF EXTRAS

Instructions for Ordering

1st—Give Number and Description of Part **2nd**—Always Give Name and Size of Mower

3rd—Always Give Year of Manufacture See Lower Side of Cutter Bar

Nos.	Name	Weight	Each
A 1—	Drive Wheel	7 lbs.	$3 50
A 6—	R. H. Pinion and Clutch	6 ozs.	64
A 7—	L. H. Pinion and Clutch	6 ozs.	64
A 8—	R. H. Reel Head, 1908 Mower	13 ozs.	1.20
A 9—	L. H. Reel Head, 1908 Mower	13 ozs.	1.20
R 8	R. H. Reel Head, 1905 to 1907	13 ozs.	1 20
R 9—	L. H. Reel Head, 1905 to 1907	13 ozs.	1 20
A11	R. H. Roller Hanger	4 ozs.	.50
A13—	L. H. Roller Hanger	4 ozs.	.50
A16	Ball Cup	2 ozs.	.38
A17—	Cap for Ball Cup	3 ozs. Dozen	26
A19—	Ball Retainer	2 ozs. Dozen	26
A21—	Set Screw, 5-16x3/4 inch	2 ozs. Dozen	1 20
A22—	Center Reel Head, 1908	9 ozs.	1 20
A23—	Bolt for Handle Brace	1 oz.	14
A26—	Bolt and Pin for Handle	3 ozs.	26
A27	Adjustable Cone	3 ozs.	76
A28—	Ratchet Pin for A6 and A7	2 ozs. Dozen	14

Nos.	Name	Weight	Each
A29—	Clamp Bolt	8 ozs. Dozen	$0 14
A30	Roller Hanger Bolt	8 ozs. Dozen	14
A31—	Bolt for Cutter Bar	4 ozs. Dozen	14
A32	Stationary Cone	2 ozs.	58
A34	Handle Socket	4 ozs.	50
A35	R. H. Side Plate	3½ lbs.	2 90
A36	L. H. Side Plate	1½ lbs.	2 90
A37	R. H. Adjusting Plate	22 ozs.	1 80
A38—	L. H. Adjusting Plate	9 ozs.	1 20
220	Center Reel Head, 1905 to 1907	5 ozs. Dozen	04
230—	Washer for Spindle	3 ozs. Dozen	10
236—	Screw for Spindle	6 ozs.	26
389—	Wrench	2 ozs.	14
370	5-16 Rod for Grinding	1 oz. Doz.	14
Balls, 5-16 inch		8 ozs.	50
Handle Grip		2½ lbs.	1 30
Handle	Complete		

	14 inch		16 inch		18 inch		20 inch	
Nos.	Name	Weight	Each	Weight	Each	Weight	Each	Weight	Each
213—	Spiral Blade for Reel	9 ozs.	$1 30	11 ozs.	$1.50	13 ozs.	$1 80	15 ozs.	$1 90
214—	Cutter Bar Complete	0 lbs.	2 50	0 lbs.	3 00	7 lbs.	3 30	7¾ lbs.	3 80
244—	¾ Iron Brace Rod	8 ozs.	.38	9 ozs.	.50	10 ozs.	50	11 ozs.	64
245—	Blade for Cutter Bar	10 ozs.	1.30	12 ozs.	1.50	14 ozs.	1 80	1 lb.	1 90
248—	Pipe Brace	13 ozs.	.50	13 ozs.	.64	14 ozs.	76	15 ozs.	76
252—	Handle Brace	16 ozs.	50	17 ozs.	64	18 ozs.	76	24 ozs.	76
253—	Wood Roller	18 ozs.	90	19 ozs.	1.00	24 ozs.	1 00	27 ozs.	1 20
268—	Reel Complete	6½ lbs.	7.50	7 lbs.	8.50	7¾ lbs.	9 30	8 lbs.	10 00

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

MOUND CITY TRADE MARK

✠ LAWN MOWER PARTS

MOUND CITY TRADE MARK

*MOUND CITY MODEL 1912

No. 34-9B

No. 41 Right

No. 42—Left

No. B5—Right
No. B6—Left

Steel Pawl

No. 1 No. 27

Reel Complete

No. 2 No. 4

Cutter Bar Complete with Steel Blade

No. A

No. 3

Wood Roller

Handle Brace

PRICE LIST OF REPAIRS

Instructions for Ordering

1st—Give Number and Description of Parts. **2nd**—Always Give Name and Size of Machine.

Nos.	Name	Weight	Each
34-9B	Drive Wheels, both alike	37⁄8 lbs.	**$1 00**
41	—R. H. Side Plate	33⁄4 lbs.	**1.00**
42	—L. H. Side Plate	33⁄4 lbs.	**1.00**
B5	—Right Hand Pinion	31⁄2 ozs.	**.25**
B6	—Left Hand Pinion	31⁄2 ozs.	**.25**
3	—Pinion Caps, both alike	1 1⁄2 ozs.	**.10**
4	—Roller Brackets, both alike	4 1⁄4 ozs.	**.20**
A	—Wheel Washer	1 oz.	**.10**
113	—Wrench	3 oz.	**.10**
2	—Cones, both alike	1 oz.	**.25**
S4	—Springs, both alike, for Ball Bearing Device	1 oz.	**.20**
27	—Ball Retainer, without Balls	1 oz.	**.20**
1	—Ball Cup	1 oz.	**.10**
RW	—Upper Handle Cap	1 oz.	**.10**
W	—Lower Handle Cap	3 ozs.	**.20**
547	R. H. and L. H. Reel Braces	7 ozs.	**.40**
548	—Center Reel Brace	6 ozs.	**.40**
Steel Balls		1⁄4 oz. Doz.	**.40**
Steel Pawls		1⁄2 oz.	**.05**
Wood Handle Complete		3 lbs.	**.50**
Handle Grip Joint Bolt, with Nut		2 1⁄4 ozs.	**.05**
Handle Brace Bolt, with Nut		1 1⁄4 ozs.	**.05**
Spring Cotter for Wheel Axle		1 1⁄2 ozs.	**.05**
Roller Bracket Bolt with Nut		1 oz.	**.06**
Pinion Cap Machine Screw, with Nut		1 oz.	**.05**
Cutter Bar Adjusting Screw		1 oz.	**.05**
Cutter Bar Pivotal Screw		1 oz.	**.05**
Set Screw for Fastening Side Plate to Axle Rod		1 oz.	**.05**
Rivets, all alike		1⁄4 oz.	**.05**
Babbit Castings, both alike for Ball Bearing Device		1 oz.	**.20**
Pins, both alike for Ball Bearing Device		1 oz.	**.05**

	12 inch		14 inch		16 inch		18 inch	
	Weight	Each	Weight	Each	Weight	Each	Weight	Each
Cutter Bar Complete	2 3⁄4 lbs.	**$0.50**	3 lbs.	**$0.60**	3 1⁄2 lbs.	**$0.70**	4 lbs.	**$0.80**
Cutter Bar Blade	9 ozs.	**.35**	10 ozs.	**.30**	12 ozs.	**.35**	14 ozs.	**.40**
Spiral Blade	9 ozs.	**.30**	10 ozs.	**.30**	12 ozs.	**.30**	14 ozs.	**.35**
Reel Complete	4 lbs.	**1 50**	5 lbs.	**1 50**	5 1⁄2 lbs.	**1 50**	6 lbs.	**1 50**
Shrub Rod-Axle	1 5⁄8 lbs.	**50**	1 3⁄4 lbs.	**.50**	2 lbs.	**50**	2 1⁄4 lbs.	**50**
Handle Brace	13 ozs.	**.15**	14 ozs.	**.15**	1 lbs.	**.15**	1 1⁄8 lbs.	**.15**
Wood Roller	1 3⁄4 lbs.	**.40**	2 lbs.	**.40**	2 1⁄4 lbs.	**.40**	2 3⁄4 lbs.	**.40**

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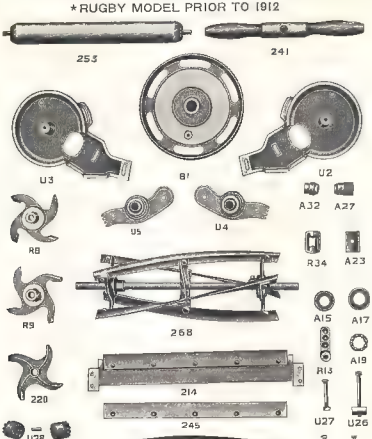
"DIAMOND EDGE IS A QUALITY PLEDGE"

✠ LAWN MOWER PARTS

*RUGBY MODEL PRIOR TO 1912



PRICE LIST OF EXTRAS

Instructions for Ordering

1st—Give Number and Description of Part. **2d**—Always Give Name and Size of Machine

3d—Always Give Year of Manufacture; See Lower Side of Cutter Bar

Nos.	Name	Weight	Each
B 1—	Drive Wheel	5 lbs.	$2 90
U 2—	R. H. Side Plate	3¾ lbs.	2 30
U 3—	L. H. Side Plate	2⅝ lbs.	2 30
U 4—	R. H. Reel Hanger	11 ozs.	1 80
U 5—	L. H. Reel Hanger	11 ozs.	1 80
B 5	Wrench for Set Screw and Cone	5 ozs.	80
U 6	-R. H. Clutch and Pinion	4 ozs.	80
U 7	-L. H. Clutch and Pinion	4 ozs.	80
R 8—	R. H. Reel Head	13 ozs.	1 40
R 9—	L. H. Reel Head	13 ozs.	1 40
R13—	Roller Hanger	3 ozs.	.46
A15—	Ball Cup	2 ozs.	.44
A17	Cap for A15	3 ozs. Dozen	.24
A19	Ball Retainer	2 ozs. Dozen	.25
A21	Set Screw	1 oz. Dozen	.14
A23—	Handle Socket	2 ozs.	.24
U26—	Handle Bolt and Pin	2 ozs.	.36

Nos.	Name	Weight	Each
A27—	Adjustable Cone	½ ozs.	$0 90
U27	Bolt for Handle Braces	1 oz.	.14
U28—	Clutch Pin	2 ozs. Dozen	.14
U29—	Clamp Bolt for Reel Hangers	8 ozs. Dozen	.14
U30—	Pivot Screw for Reel Hangers	8 ozs. Dozen	.14
U31—	Stove Bolt for Cutter Bar	4 ozs. Dozen	.14
U32—	Screw Bolt for Roller Hanger	3 ozs. Dozen	.14
A32—	Stationary Cone	1½ ozs.	58
R34—	Handle Socket	4 ozs.	58
229—	Center Reel Head	9 ozs.	1 10
230—	Wrought Wheel Washer	5 ozs. Dozen	36
236—	Screw to Hold Wheel on	3 ozs. Dozen	10
241—	Handle Grip	8 ozs.	58
369—	Wrench	5 ozs.	46
Handle	Complete	2¾ lbs.	1 80
Balls,	3-16 inch	1 oz. Dozen	.14

		14 inch		16 inch		18 inch		20 inch	
Nos.	Name	Weight	Each	Weight	Each	Weight	Each	Weight	Each
213—	Spiral Blade for Reel	8 ozs.	$1.80	10 ozs.	$ 2 20	12 ozs.	$ 2 30	14 ozs.	$ 2 50
214—	Cutter Bar Complete	2¾ lbs.	3.40	3½ lbs.	4 00	3¾ lbs.	4 50	4¼ lbs.	5 20
244—	⅜ inch Steel Brace Rod	8 ozs.	.86	9 ozs.	.88	10 ozs.	.88	11 ozs.	.90
245—	Blade for Cutter Bar	9 ozs.	1.80	11 ozs.	2.30	12 ozs.	2.30	14 ozs.	2 50
248—	Pipe Brace	12 ozs.	.66	13 ozs.	.80	14 ozs.	.90	16 ozs.	1 10
252—	Handle Brace	15 ozs.	.66	16 ozs.	.80	17 ozs.	.90	18 ozs.	1 10
253—	Wood Roller	16 ozs.	1.20	18 ozs.	1.30	19 ozs.	1.40	20 ozs.	1 50
268—	Reel Complete, 4 Knives	5¾ lbs.	9 00	6¼ lbs.	10 00	6¾ lbs.	11 50	7 lbs.	12 50

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

LEMON SQUEEZERS

Closed

Length 9½ inches; Outside Diameter of Bowl 3½ inches

Per Dozen

No. 37—Cast Aluminum Cup, Lid and Plunger; Japanned Malleable Iron Frame; Weight per Dozen 22½ lbs. **$21.00**

Per Dozen

No. 38—Porcelain Cup; Aluminum Lid; Hardwood Plunger; Japanned Malleable Iron Frame; Weight per Dozen 24 lbs. **$12.50**

One Twelfth Dozen in a Box

Open

Per Dozen

No. EB38—Extra Porcelain Cups; Weight per Dozen 6 lbs. **$3.80**

Loose

LITTLE GIANT

Per Dozen

No. 23—Tinned Cast Iron Frame and Hollow Handles; Tinned Steel "Anti-Squirt" Juice Shield; Four Joints in Frame; Size of Frame 2¼x2¼ inches; Length Over All 9½ inches; Weight per Dozen 16 lbs. **$3.20**

Per Dozen

No. 2—Japanned Gray Iron Frame; Removable **Aluminum Cup** with Ridged Cone and Lip; Length 9½ inches; Diameter of Cup 3¼ inches; Weight per Dozen 15 lbs. **$8.20**

Half Dozen in a Box

Per Dozen

No. 20—Japanned Malleable Iron Frame; **Porcelain Perforated Cup;** Hardwood Pressure Ball; Length 8½ inches; Diameter of Bowl 3½ inches; Weight per Dozen 17 lbs **$5.00**

BOSS

Tinned Malleable Iron; Lipped Cup; Rivet Hinge; Hole in Handle for Hanging.

Per Dozen

No. 06—Length 8 inches; Diameter 3 inches; Weight per Dozen 10 lbs. **$3.50**

No. 10—Length 10½ inches; Diameter 3¾ inches; Weight per Dozen 18 lbs. **$.80**

Half Dozen in a Box

CRESCENT

Per Dozen

No. 100—Tinned Malleable Iron with Scalloped Cone and Perforated Cup; Length Over All 8 inches; Diameter of Bowl 2¾ inches; Weight per Dozen 7 lbs **$2.20**

One Dozen in a Box

STAR

Per Dozen

No. 5—Tinned Malleable Iron with Perforated **Cup;** Length Over All 8 inches; Diameter of Bowl 2½ inches; Weight per Dozen 13 lbs **$5.00**

One Dozen in a Box

Per Dozen

No. 61—Smooth Maple Frame; Polished Lignum-vitae Knob and Perforated Bowl; Nickel Plated, Wrought Steel Hinge; Length 11½ inches, Width 3¾ inches; Weight per Dozen 16 lbs. **$12.50**

Loose

Per Dozen

No. 0—Smooth Maple Steel Hinge Joint; Length Over All 10 inches; Width 2⅞ inches; Weight per Dozen 8 lbs. **$2.20**

One Dozen in a Box

LIME SQUEEZERS

Aluminum; with Strainer; Only Clear Juice is Delivered into the Glass; Strainer holds Pits and Pulp.

Per Dozen

Lime—Length 7 inches; Jaws Open 2¼ inches; Weight per Dozen 1 lb **$30.00**

One Dozen in a Box

LEMON JUICE EXTRACTORS

GLASS

Per Dozen

No. 1—For use with Tumbler, Perforated Bottom; Diam. 3¾ in.; Wt. Doz. 4¾ lbs. **$1.20**

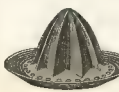
One Dozen in a Box

GLASS

Per Doz.

No. 4—With Saucer Shaped Rim, Handle and Lip; Diam. 6 in.; Wt. Dozen 11½ lbs. **$2.30**

Third Dozen in a Box



ALUMINUM

Per Doz.

No. 1A—For use with Tumbler; Perforated Bottom; Diam. 3¾ in.; Wt. Dz. 3½ lbs. **$2.80**

One Dozen in a Box

METAL ROUND CASE CLOCKS

WITHOUT ALARM

BEE ONE DAY TIME

Seamless Brass Case; 2 inch White Dial with Roman Numerals; Beveled Plate Glass; Keyless, Winds by turning the Back; Plain Brass Trimmings; Height over all 3¼ inches, Depth 1½ inches.

Each

No. 1T—Nickel Plated..... **$1.50**

One in a Tin Box; 100 in a Case, Case Weighs 68 lbs.
(Made by the Ansonia Clock Co.)

BEE EIGHT DAY TIME

Seamless Brass Case; 2 inch White Dial with Roman Numerals; with Second Hand; Beveled Plate Glass; Winds with Detached Key; Plain Brass Trimmings; Height over all 3¼ inches, Depth 2 inches.

Each

No. 8T—Nickel Plated.. **$2 50**
No. 8G—Gilt; Satin Finish **2 50**

One in a Tin Box; 50 in a Case, Case Weighs 28 lbs.
(Made by the Ansonia Clock Co.)

LA SALLITA ONE DAY TIME

Seamless Brass Case; 2 inch Ivory Finish Dial with Fancy Gilt Center; Arabic Figures; Beveled Plate Glass; Attached Key and Hand Sets; Plain Brass Trimmings; Height over all 3¼ inches, Depth 1½ inches.

Each

No. LS1 Nickel Plated.. **$1.25**

One in a Box; Weight ½ lb.
(Made by the Western Clock Mfg. Co.)

WITH ALARM

BEE ONE DAY TIME AND ALARM

Seamless Brass Case; 2 inch White Dial with Roman Numerals; Beveled Plate Glass; Keyless, Winds by Turning the Back; 1¾ inch Bell on Top; Stem Winding Alarm Movement Inside the Bell; Plain Brass Trimmings; Height over all 4 inches; Depth 1¾ inches; Continuous Ringing Alarm for Ten Seconds.

Each

No. 1A—Nickel Plated **$2 20**

One in a Box; 50 in a Case; Case Weighs 47 lbs
(Made by the Ansonia Clock Co.)

BEE ONE DAY TIME AND REPEATING ALARM

Seamless Brass Case; 2 inch White Dial with Roman Numerals; Beveled Plate Glass; Attached Keys and Hand Sets; 1¾ inch Bell on Top; **the Alarm Rings for Several Seconds, Pausing, and After a Period of Silence, again Ringing, and so on for a Number of Minutes;** Alarm can be Stopped by the Use of the Lever at the Back. Plain Brass Trimmings; Height over all 4 inches; Depth 1¾ inches.

Each

No. 1RA—Nickel Plated..... **2.50**

One in a Box; 50 in a Case, Case Weighs 37 lbs.
(Made by the Ansonia Clock Co.)

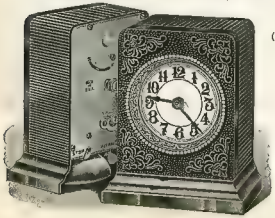
JUNIOR TATTOO ONE DAY TIME AND ALARM

Seamless Brass Case; 2 inch White Dial with Arabic Figures; Beveled Plate Glass; Attached Keys and Hand Sets; has 1⅞ inch Bell on Back and is an Intermittent Ringer; **the Alarm Rings for Several Seconds, then Pausing, and after a Period of Silence, again Ringing.** To insure this the Time as well as the Alarm Side must be Wound Up. Can be Closed Off by Use of Lever. Nickel Trimmings; Height over all 3¾ inches; Depth 2 inches.

Each.

No. JT2—Nickel Plated..... **$2.50**

One in a Box; 50 in a Case; Case Weighs 35 lbs.
(Made by the New Haven Clock Co.)



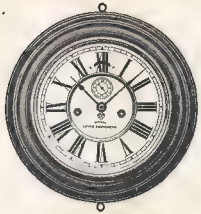
FANCY ALARM CLOCKS

Dealers' Names Printed Free of Charge in Case Lots of 24 Only

Each

Iron Clad—Bronze Plated, Cast Iron Case, Height 5 inches; Dial 2¾ inches; Rings 45 Seconds but can be Shut Off at Will; Weight Each 2½ lbs. **$2 00**

OFFICE CLOCKS
LEVER AND PENDULUM



NICKEL LEVER

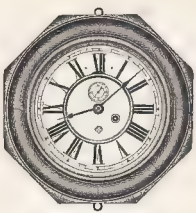
8 Day Time; Round Brass Case, Nickel Plated; Glass Door; Roman Numerals; Second Hand

Each

No. 68N 6 inch Dial..... $8.00

One in a Cardboard Box; Twelve in a Case; Case Weighs 62 lbs.

(Made by Ansonia Clock Co.)



ANSONIA LEVER

8 Day Time; Octagon Oak Case, Golden Finish; Glass Door; Roman Numerals; Second Hand.

Each

No. 68A—6 inch Dial..... $8 00

One in a Cardboard Box; Twelve in a Case; Case Weighs 62 lbs.

(Made by Ansonia Clock Co.)

CABLE LEVER

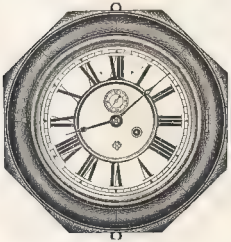
8 Day Time; Round Cable Oak Case, Golden Finish; Glass Door; Roman Numerals, Second Hand.

Each

No. 68C—6 inch Dial. $8 00

One in a Cardboard Box; Twelve in a Case; Case Weighs 62 lbs.

(Made by Ansonia Clock Co.)



ANSONIA LEVER

8 Day Time; Octagon Oak Case, Golden Finish; Glass Door; Roman Numerals; Second Hand.

Each

No. 88A—8 inch Dial $8 90

One in a Cardboard Box; Six in a Case; Case Weighs 49 lbs.

(Made by Ansonia Clock Co.)

GRESHAM PENDULUM

8 Day Time; Round Oak Polished Veneer Case, Golden Finish; Glass Door; Roman Numerals; Without Second Hand.

Each

No. G12—12 inch Dial..... $8 00

One in a Box; Six in a Case; Case Weighs 84 lbs.

Made by Ansonia Clock Co.)

LOBBY PENDULUM

8 Day Time; Round Wood Case, Marbleized White Enameled Steel Dial; Raised Brass Arabic Figures on White Enameled, Marbleized Metal Dial.

Each

No. LC14—14 inch Dial.....$17 00

One in a Wood Box; Three in a Crate; Crate Weighs 53 lbs.

(Made by Sessions Clock Co.)

KITCHEN OR NURSERY

Steel Case and Dial; 8½ inch Dials with Enameled Dutch Designs and Large Arabic Figures; Fitted with 1 Day Time Movements; Weight 2 lbs.

Each

No. 140—Blue Delft Dial $3 50

No. 141—Dial Painted in Natural Colors 4.80

(Imported)

TACK CLAWS

*DIAMOND EDGE

Polished Crucible Steel Shank and Claw; Polished Rosewood Finished Handle; Nickel Plated Brass Ferrule

OCTAGON SHANK

Per Dozen

No. DE25—Length 6¼ inches; Size of Shank 5-16 inch; Shank Extends Through Handle and is Riveted at End; Weight per Dozen 2 lbs. $3.60

One Dozen in a Box

SQUARE SHANK

Per Dozen

No. DE35—Length 6¾ inches; Size of Shank 5-16 inch; Weight per Dozen 2 lbs. $3.00

One Dozen in a Box

*BRIDGE

Per Dozen

No. B15—Forged Steel Tempered Shank and Claw, Stained Hardwood Handle; Nickel Plated Brass Ferrule; Length 7 inches; Size of Shank ⅜ inch; Weight per Dozen 2 lbs. . . $2.00

One Dozen in a Box

STERLING KANT BREAK

Per Dozen

No. KB—Length 6⅝ inches; Nickel Plated Malleable Iron Shank; Reinforced Tempered Steel Claw, Riveted to Heel; Polished Hardwood Handle; Weight per Dozen 2 lbs $1 80

One Dozen in a Box

CARPET STRETCHERS

HINKLE STAND-UP

With Tack Claws

Japanned Malleable Iron Frame, Stained Handle

Per Dozen

No 5—Claw Bar 11 inches Long, Anchor Bar 17 inches Long; Handle 27 inches Long; Diameter of Socket 1 inch; Weight 45 lbs. per Dozen. $20.00

One Dozen in a Box

EXCELSIOR

Combined Stretcher and Tack Hammer; Hardwood Frame; Japanned Malleable Iron Lever and Hammer; Tempered Steel Wire Claws; Self Locking Ratchet.

Per Dozen

No. 8—Claw Bar 16 inches Long, Anchor Bar 14½ inches Long; Lever and Hammer 9 inches Long; Weight per Dozen 18 lbs. $14.50

One in a Cardboard Box

BULLARD

Japanned Malleable Iron Frame and Claws; Japanned Steel Lever; Oil Finished Hardwood Handle.

Per Dozen

No. B—Length of Frame 9 inches; Length of Lever 9 inches; Length of Claw Bar 3½ inches; Length Over all 13¼ inches; Weight per Dozen 8½ lbs. . $9.60

Half Dozen in a Box

Full Polished Cast Steel, with Socket

Per Dozen

No. 2—Claw Face 3½ inches Long; ¾ inch Socket Hole; Length Over All 6 inches; Weight per Dozen 4 lbs. . $3.30

One Dozen in a Box

Japanned Cast Iron Frame and Socket; Stamped Steel Face with Claws Riveted on.

Per Dozen

No. 1—Claw Face 4½ inches Long; 1 3-16 inch Socket; Length 4¾ inches; Weight per Dozen 6 lbs. $1.70

One Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

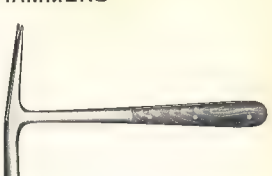
UPHOLSTERERS HAMMERS

*DIAMOND EDGE

Per Dozen

No. DE80—**Adze Eye;** with Claw; Highly Polished Crucible Steel Head 5¾ inches Long; Extra Quality Polished Hickory Handle; Length Over All 10½ inches; Weight per Dozen 7 lbs. $9.60

Half Dozen in a Box

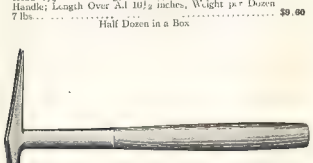


SOLID HEAD AND SHANK

Per Dozen

No. 67—Polished Steel **One Piece** Head, Shank and Handle Bar, Polished Rosewood Inlaid Handle Brace Pieces, Length of Head 6½ inches, Assorted Faces 1½, 1¾ and 1½ inch, Length Over All 10½ inches; Weight per Dozen 7 lbs. $18 00

Half Dozen in a Box



SOCKET SHANK

Per Dozen

No. 122—Full Polished Cast Steel Head and Square Shank, Polished Hickory Handle; ¾ inch Hammer Face, Length of Head 6 inches; Length Over All 11¾ inches, Weight per Dozen 6½ lbs. $9 60

Half Dozen in a Box

ADZE EYE

Per Dozen

No. 650—5½ inch **Polished Steel Head** with Claw; White Hickory Handle; Size of Face 1¼ inch; Length Over All 10½ inches, Weight per Dozen 5 lbs. $5 40

No. 67—**Nickel Plated Cast Iron;** Otherwise Same as No. 650 . . 2 10

One Dozen in a Box

BILL POSTERS' HAMMERS

MAGNETIC

Magnetized Nickel Plated Forged Steel Head; Nickel Plated Trimmings; Polished Ash Handle

MAGNETIC HAMMER HEADS

Without Handle

Per Dozen

No. 500—Weight 5 ozs., 4x1½ inch, Weight per Dozen in Box 4½ lbs. $20 00

No. 800—Weight 8 ozs.; 4½x1⅝ inch; Weight per Dozen in Box 6½ lbs. 23 00

One Dozen in a Box

HANDLES AND ATTACHMENTS

Per Dozen

No. J36—**Jointed Handle,** Two Sections; 36 inches; Weight per Dozen 6 lbs. $15 50

No. P36—**Plain Handle,** One Piece, 36 inches, Weight per Dozen 6 lbs. 7 50

No. P24—**Plain Handle,** One Piece, 24 inches; Weight per Dozen 3 lbs. 7 00

No. CA—**Spring Attachment** for Card and Tacks; Weight per Dozen ½ lb 1 20

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

MANTEL CLOCK ASSORTMENTS

SIX CLOCKS IN AN ASSORTMENT. WE WILL NOT BREAK ASSORTMENTS

DRAGON—Oak

DULCET—Oak

DOUBLET—Oak

REFLECTOR—Oak

CRYSTAL—Oak

PRISM—Oak

The Above Six Styles Comprise the Tablemir Assortment

Height 22¾ inches; Width 14⅛ inches at Base; 6 inch Dial, Roman Numerals; Wire Bell; Glass Doors, Gilt Decorated Fancy Pendulums; Assorted Style Cases, Three with Carved Black Wood Tablets Across Top and Sides and three with Mirror Panels on Sides.

	Per Assortment
No. TS —Six Clocks; One of Each Pattern; All Oak; 8 Day, **Half Hour Strike**.	$36 00
No. TA —Six Clocks; One of Each Pattern; All Oak; 8 Day, **Half Hour Strike, with Alarm**	28 00
No. TSA—Six Clocks; Assorted Patterns; All Oak; 8 Day, **Three Half Hour Strike and Three Half Hour Strike, with Alarm**. .	27 00

One Assortment in a Case; Weight per Assortment 70 lbs.

(Made by The E. Ingraham Co.)

No. A—Oak

No. B—Oak

No. C—Walnut

The Above Three Styles Comprise the Merchants Assortment

Height 22¾ inches; Width 15 inches at Base; 6 inch Dial, Roman Numerals, Wire Bell, Glass Doors Gilt Decorated; Handsomely Carved Cases

	Per Assortment
No. MS —Six Clocks; Two of Each Pattern; 8 Day, **Half Hour Strike**.	$31 00
No. MA —Six Clocks; Two of Each Pattern; 8 Day, **Half Hour Strike, with Alarm**.	23 00
No. MSA—Six Clocks; Assorted Patterns; 8 Day, Three **Half Hour Strike and Three Half Hour Strike, with Alarm**	21 50

One Assortment in a Case; Weight per Assortment 80 lbs.

(Made by the New Haven Clock Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

MANTEL CLOCK ASSORTMENTS

SIX CLOCKS IN AN ASSORTMENT. WE WILL NOT BREAK ASSORTMENTS

ASPEN—Oak

ANTLER—Oak

ARCTIC—Oak

ARLINGTON—Walnut

ADEN—Walnut

ANDES—Walnut

The Above Six Styles Comprise No. A Assortment

Height 22 inches; Width 14¼ inches at Base; 6 inch Dial, Roman Numerals; Wire Bell; Glass Doors, Silver Decorated

		Per Assortment
No. AS	—Six Clocks; Three Oak and Three Walnut; 8 Day, **Half Hour Strike**.	**$24 00**
No. AA	—Six Clocks; Three Oak and Three Walnut; 8 Day, **Half Hour Strike, with Alarm**.	**26 00**
No. ASA	—Six Clocks; Assorted Oak and Walnut; 8 Day, **Three Half Hour Strike** and **Three Half Hour Strike, with Alarm**	**25 00**

One Assortment in a Case; Weight per Assortment 90 lbs.

(Made by Ansonia Clock Co.)

No. 40—Oak

No. 41—Oak

No. 42—Oak

The Above Three Styles Comprise the Victor Assortment

Height 22¾ inches; Width 14½ inches at Base; 6 inch Dial, Roman Numerals; Wire Bell; Glass Doors, Gilt Decorated; Full Length Independent Side Brackets.

		Per Assortment
No. VS	—Six Clocks; Two of Each Pattern; All Oak; 8 Day, **Half Hour Strike**.	**$22.00**
No. VA	—Six Clocks, Two of Each Pattern; All Oak; 8 Day, **Half Hour Strike, with Alarm**.	**25.00**
No. VSA	—Six Clocks; Assorted Patterns; All Oak; 8 Day, **Three Half Hour Strike** and **Three Half Hour Strike, with Alarm**.	**23.00**

One Assortment in a Case; Weight per Assortment 72 lbs.

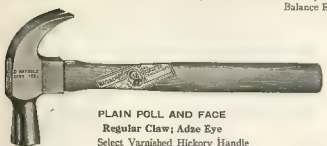
(Made by Sessions Clock Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

MAYDOLE NAIL HAMMERS

Solid Crucible Cast Steel; Perfectly Tempered; Polished; Selected Second Growth Hickory Handle

Western Territory Comprises Montana, Wyoming, Colorado, New Mexico and All Territory West
Balance Eastern Territory



PLAIN POLL AND FACE

Regular Claw; Adze Eye

Select Varnished Hickory Handle

Nos.	M1	M13½	M2
Size	1	1½	2
Weight Less Handle, Ozs	20	16	13
Diameter of Face, Inches	1½	1	⅞
Weight per Dozen, Lb	20	18	14
Per Dozen	$8.75	8.00	7.50
Eastern Territory	12.50	11.50	10.70
Western Territory	13.50	12.00	11.20

ROUND NECK AND POLL; BELL FACE

Regular Claw; Adze Eye

Select Varnished Hickory Handle

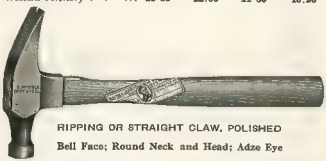
Nos.	M11	M13½	M12	M13
Size	1	1½	2	3
Weight Less Handle, Ozs	20	16	13	7
Diameter of Face, Inches	1½	1 1-16	1	¾
Weight per Dozen, Lbs	20	18	15	9
Per Dozen	$8 75	8.00	7 50	6.75
Eastern Territory	12 50	11 40	10 80	9 60
Western Territory	13 50	12.00	11 30	10.20

NICKEL PLATED HEAD: EBONIZED HANDLE

Bell Face; Round Neck and Head; Adze Eye

Nos.	M611½	M612
Size	1½	2
Weight Less Handle, Ozs	16	12
Diameter of Face, Inches	1	⅞
Weight per Dozen, Lbs	18	14
Per Dozen	$12.75	12.00
Eastern Territory	18.30	17.00
Western Territory	18.30	18.00

Half Dozen in a Box



RIPPING OR STRAIGHT CLAW, POLISHED

Bell Face; Round Neck and Head; Adze Eye

Nos.	M711	M711½	M712
Size	1	1½	2
Weight Less Handle, Ozs	20	16	12
Diameter of Face, Inches	1½	1 1-16	1
Weight per Dozen, Lbs	20	18	14
Per Dozen	$8 75	8.00	7.50
Eastern Territory	13.50	11.40	10.80
Western Territory	13.50	12.00	11.30

MOUND CITY TRADE MARK

*MOUND CITY NAIL HAMMERS

MOUND CITY TRADE MARK

Full Polished Cast Steel; Polished

Hickory Handle; Medium Quality

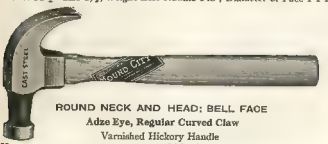
PLAIN POLL AND FACE

Adze Eye, Regular Curved Claw; Polished

Hickory Handle

Per Dozen

No. MC1½—Size 1½; Weight Less Handle 1 lb ; Diameter of Face 1 1-16 inches; Weight per Dozen 18 lbs. $7.50



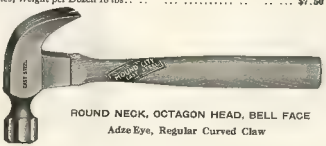
ROUND NECK AND HEAD; BELL FACE

Adze Eye, Regular Curved Claw

Varnished Hickory Handle

Nos.	MC11½	MC12	MC13
Size	1½	2	3
Weight Less Handle, Ozs	16	13	7
Diameter of Face, Inches	1 1-16	1	¾
Weight per Dozen, Lbs	18	16	10
Per Dozen	$7 50	6.70	6.00

Half Dozen in a Box



ROUND NECK, OCTAGON HEAD, BELL FACE

Adze Eye, Regular Curved Claw

Polished Hickory Handle

Per Dozen

No. MC01½—Size 1½; Weight Less Handle 1 lb.; Diameter of Face 1 1-16 inches; Weight per Dozen 18 lbs. $10.00

*BRIDGE HAMMERS

Cast Tool Steel, Drop Forged from One Piece Solid Steel; Carefully Tempered and Hardened to Withstand the Severest Usage. Handles with Selected Second Growth, Polished Hickory Handle, Shaped and Driven to Give Perfect Hang and Balance and Fastened with a Patent Lock Wedge, which Prevents the Head Coming Off.

Bridge Tools Are Strictly High Grade and Give Perfect Satisfaction

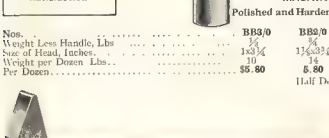
MACHINISTS' BALL PEIN

Polished and Hardened Head and Pein, Black Neck

Wedge Used on Bridge Hammers

Nos.	BB3/0	BB2/0	BB0	BB1	BB2	BB3	BB4	BB5
Weight Less Handle, Lbs	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4
Size of Head, Inches	1x3/4	1 1/16x3/4	1 1/4x1 1/4	1 5/16x1 3/4	1 1/2x1 3/4	1 3/4x1 3/4	1 5/8x1 3/4	1 3/4x1 3/4
Weight per Dozen Lbs	10	14	16	20	24	28	28	33
Per Dozen	$5.80	5.80	6.00	6.70	7.00	7.80	8.00	8.50

Half Dozen in a Box



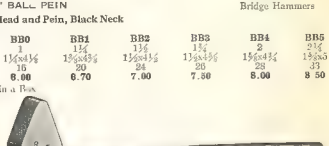
ENGINEERS' OR PLOW

Full Polished; Single Face; Cross Pein

Used on all Kinds of Steel Work and for Beating Out and Sharpening Plow Shares

Nos.	BE0	BE1	BE2	BE3	BE4
Weight Less Handle, Lbs	1 1/2	1 3/4	2	2 1/2	3
Size Head, Inches	1 3/4x1	1 3/4x1 1/4	1 5/8x1 5/8	1 5/8x1 3/4	1 3/4x2
Weight per Dozen, Lbs	19	23	29	34	42
Per Dozen	$10 00	11 00	11 50	12.00	13 00

Half Dozen in a Box



BLACKSMITHS' HAND

Full Polished; Cross Pein; Plain Eye

Hardened Head and Pein

Nos.	BH0	BH1	BH2	BH3	BH4
Wt. Less Handle, Lbs	1 5/8	2	2 3/4	3	3 1/4
Size Head, Inches	1 3/4x1 1/4	1 3/4x1 3/4	1 5/8x1 3/4	1 5/8x2	2x2 1/4
Weight per Dozen, Lbs.	23	28	36	42	48
Per Dozen	$11 00	11.50	12.00	13.00	14.00

Half Dozen in a Box

RIVETING

Plain Eye; Hardened Cross Pein; Full Polished

Nos.	BR0	BR1	BR2	BR3	BR4	BR5
Weight Less Handle, Ozs	4	7	9	12	15	18
Weight per Dozen, Lbs	9-16x3/4	5/8x1	5/8x1 1/4	7/8x1 3/4	1x1 3/4	1 1/4x1
Per Dozen	$6 30	6.60	6.90	7.20	7.80	8 40

Half Dozen in a Box

BRICKLAYERS'

Plain Eye; Square Faced; Full Polished

Nos.	B01	B02
Weight Less Handle, Lbs	1 1/4	1 1/2
Length of Head, Inches	6 1/2	7
Size of Face, Inches	7/8x1 3/4	1x1 3/4
Width of Bit, Inches	1 1/4	1 5/8
Weight per Dozen, Lbs	25	32
Per Dozen	$13.50	14.50

Half Dozen in a Box

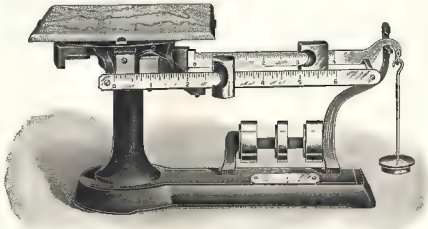
"Diamond Edge is a Quality Pledge"

MARKET SCALES

Each

No. 39—Capacity 32 lbs. by 1 oz.; Improved; Double Dials, Hardened Steel Bearings; Cast Iron Frame and Base; Black Japanned, Gilt Striped; 6 inch Dial; 8 inch Sash; Marble Top; Size 11½x14½ inches; Weight Each 60 lbs.... $20.50

One in a Box



Mc GREW

Full Agate Bearings with Full Jeweled Caps; Nickel Plated Brass Trimmings; Nickel Plated Cast Iron Weights; Scale is Easily Regulated by Adjusting Screw; 6 Pound Beam; 4 Pound Tare Beam.

Capacity 44 lbs.

Bronze Finish, Red Striped

	Each
No. MG52—With 10x10 inch Marble Platform.	$40 00
No. MG51—With 9x18 inch Brass Scoop....	42 00
No. MG50—With Platform and Scoop..	44.00

One in a Box; Weight Each 50 lbs.

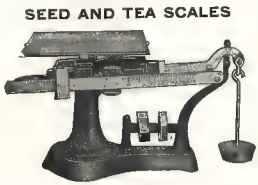
Capacity 34 lbs.

Red Finish, Nicely Striped

	Each
No. MG49—With 10x10 inch Iron Platform	$28 00
No. MG46—With 10x10 inch Marble Platform..	29 00
No. MG48—With 9x18 inch Brass Scoop	31 00
No. MG47—With Iron Platform and Scoop	32 00
No. MG45—With Marble Platform and Scoop	33 00

One in a Box; Weight Each 50 lbs.

SEED AND TEA SCALES



Mc GREW

Capacity 6 lbs. by ¼ oz.; Full Agate Bearings; Nickel Plated Beam and Poise; Length 11 inches

	Each
No. MG74—With 6½x8½ inch Plate Glass Platform	$14.50
No. MG73—With 12½x6 inch Seamless Brass Scoop	16 50

One in a Box; Weight Each 10 lbs.

"Diamond Edge is a Quality Pledge"

STRAIGHT DIAL FAMILY SCALES

The Case is Made of Sheet Steel, Nicely Enameled and Decorated; the Dial is White Enameled, with Black Figures and Markings; Adjusted by Thumb Screw on Top of Scale.

WITH PLATFORM

Each

No. 25—Capacity **25 lbs.**; Height About 8½ inches; Weight Each 3⅝ lbs **$2.10**

No. 60—Capacity **60 lbs.**; Height About 12 inches; Weight Each 16 lbs. . . . **4.20**

One in a Box

WITH PLATFORM AND SCOOP

Capacity **25 lbs.**; Height About 11 inches; Size of Scoop 12½x7¼ inches. Each

No. 25T—With Tin Scoop **$2.40**

No. 25B—With Brass Scoop **3.00**

Weight Each 4½ lbs.

No. 60T—Capacity **60 lbs.**; Height 18 inches; Tin Scoop, Size 20x10 inches; Weight Each 19 lbs **5.40**

One in a Box

WITH HORN AND SCOOP

Capacity **25 lbs.**; Height About 11 inches; Size of Scoop 12¼x7¼ inches.

Each

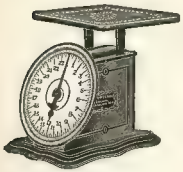
No. 25HT—With Tin Scoop. **$2.30**

No. 25HB—With Brass Scoop. . . . **3.00**

One in a Box; Weight 4¾ lbs.

SLANTING DIAL FAMILY SCALES

The Dial is Set at an Angle and Can be Read without Stooping; Platform Does Not Shade Dial; Figures and Markings are Plainly Marked; Frame is Black Enameled, Aluminum Bronze Decorated.



WITH PLATFORM

Each

No. 025—Capacity **25 lbs.**; Height About 8¾ inches; Weight Each 3¾ lbs **$1.70**

One in a Box

WITH PLATFORM AND SCOOP

Each

No. 025T—Capacity **25 lbs.**; Height About 11 inches; Tin Scoop, Size 12¼x7¼ inches; Weight Each 4½ lbs. **$2.30**

One in a Box

WITH HORN AND SCOOP

Each

No. 025HT—Capacity **25 lbs.**; Height About 11 inches; Tin Scoop, Size 12¼x7¼ inches; Weight Each 4½ lbs. **$2.20**

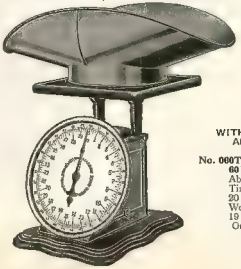
One in a Box

WITH PLATFORM

Each

No. 060—Capacity **60 lbs.**; Height About 12 in.; Weight Each 16 lbs **$4.80**

One in a Box



WITH PLATFORM AND SCOOP

Each

No. 060T—Capacity **60 lbs.**; Height About 18 in.; Tin Scoop, Size 20 x 10 inches, Weight Each 19 lbs **$9.60**

One in a Box

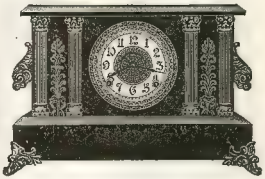
ENAMELED WOOD MANTEL CLOCKS

Black Enameled Wood Cases; Fine Piano Finish; Movements 8 Day Patent Regulator; the Hour is Struck on a Cathedral Gong, the Half Hour on a Cup Bell; 5 inch Fancy Dials with Arabic Figures; Plain Glass Front in Brass Frame with Brass Hinge.

Each

No. 2—Height 11 inches; Length of Base 13½ inches; Green Marbleized Mouldings and Panels; Six Venetian Green Metal Columns with Gilt Trimmings..... **$8.50**

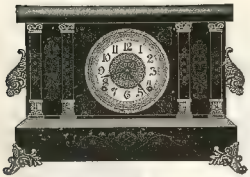
One in a Box; Three in a Crate; Crate Weighs 40 lbs.



Each

No. 3—Height 11 inches; Length of Base 16 inches; Four Venetian Green Metal Columns with Gilt Metal Ornaments between Columns on Red Panel Background. **$9 20**

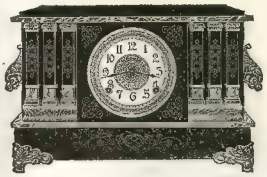
One in a Box, Three in a Crate; Crate Weighs 40 lbs.



Each

No. 7—Height 11¾ inches; Length of Base 16¼ inches; Four Black Flat Columns, Gilt Decorated; Gilt Metal Trimmings..... **$9.20**

One in a Box, Three in a Crate; Crate Weighs 45 lbs.



Each

No. 10—Height 11 inches; Length of Base 16 inches; Green Marbleized Mouldings; Six Black Flat Columns, Gilt Decorated; Gilt Metal Trimmings **$9.00**

One in a Box, Three in a Crate; Crate Weighs 45 lbs.

Each

No. 15—Height 11 inches; Length of Base 17 inches; Dome Top; Green Marbleized Mouldings; Six Full Round Brass Columns; Gilt Metal Trimmings..... **$11.00**

One in a Box, Three in a Crate; Crate Weighs 50 lbs.

Each

No. 16—Height 12½ inches; Length of Base 17 inches; High Dome Top; Green Marbleized Mouldings; Four Onyx Celluloid Columns with Gilt Festoons between; Gilt Metal Trimmings. **$10.50**

One in a Box, Three in a Crate; Crate Weighs 50 lbs.

(Made by the E. Ingraham Co.)

"DIAMOND EDGE IS A QUALITY PLEDGE"

ENGLISH CABINET NOVELTY CLOCKS

Solid Mahogany Cases, Marquetry Inlaid; Highly Polished; Movements 1 Day Lever Time; 2 Inch Porcelain Dials; Beveled Glass; Large Arabic Numerals; Blued Steel Hands.

YORK

Each

York—Height 8¾ inches; Width 4¾ inches; Weight 1⅓ lbs..... **$8.00**

LEEDS

Each

Leeds—Height 8½ inches; Width 4½ inches; Weight 1⅓ lbs..... **$6.00**

One in a Cardboard Box
(Made by Sessions Clock Co.)

DOVER

Each

Dover—Height 8½ inches; Width 4¾ inches; Weight 1⅓ lbs..... **$8.60**

MISSION MANTEL CLOCKS

Solid Oak Cases, Flemish Finish; Movements 8 Day, Half Hour Strike, Cathedral Gong; 6 Inch Wood Dials with Cast Numerals and Fancy Brass Hands; Lattice Work Glass Door; Oxidized Copper Hinges and Latches.

SAN PEDRO

Each

No. SP10—Height 19 inches; Width 12½ inches **$8.50**

Six in a Case; Case Weighs 90 lbs.

SAN MATEO

Each

No. SM20—Height 20½ inches; Width 9⅝ inches..... **$6.50**

Six in a Case, Case Weighs 85 lbs.
(Made by the New Haven Clock Co.)

SANTA CLARA

Each

No. SC30—Height 20¾ inches; Width 11¾ inches..... **$6.50**

Six in a Case; Case Weighs 85 lbs.

CLOCK KEYS

Cold Hard Drawn Brass Shanks; Stamped Brass Bows; Bright Finish.

Per Dozen

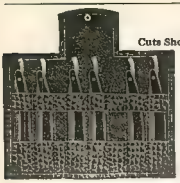
No. K—For Kitchen Clocks; Weight per Dozen 4 ozs..... **$0.80**

Loose

No. P—For Parlor Clocks; Weight per Dozen 5 ozs..... Per Dozen **$1.00**

RAZOR CASES

Cuts Show Cases With Razors, but they are Furnished Empty Only; Razors are not Included in Price of Cases



Per Dozen

No. 8SP—For Two Razors; Black Russia Leather; Tan Leather Lined; with Inside Flap to Prevent Razors Falling Out; Glove Fastener; Size Open 7 x 7 inches; Size Folded 7 x 3 inches; Weight per Dozen ¾ lbs. **$11.00**

No. 36—For Six Razors; Black Imitation Morocco; Red Velvet Lined; with Inside Flap to Prevent Razors Falling Out; Glove Fastener; Size Open 9½ x 6¾ inches; Size Folded 7¾ x 3¼ inches; Weight per Dozen 1⅛ lbs. **12 50**

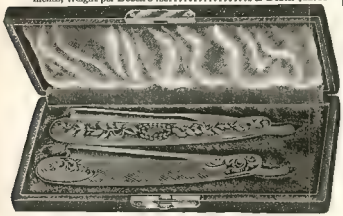
One Dozen in a Box

No. 121—For One Razor; Wood Case Covered with Black Russia Leather; Lined with Silk and Plush; Assorted Colors; Spring Hinge Lid; Nickel Plated Sliding Clasp; Size 7⅜ x 1¾ x 1 inches; Weight per Dozen 3 lbs. ..... Per Dozen **$14.00**

Wood Case Covered with Black Russia Leather; Lined with Silk and Plush; Assorted Colors; Spring Hinge Lid; Nickel Plated Sliding Clasp.

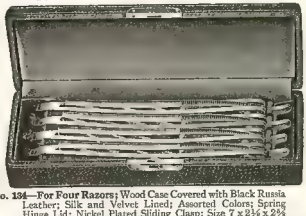
No. 132—For Two Razors; Size 7 x 1½ x 1½ inches; Weight per Dozen 2¾ lbs. ..... Per Dozen **$20.00**

No. 133—For Three Razors; Size 7 x 1¾ x 1½ inches; Weight per Dozen 3 lbs. ..... Per Dozen **25.00**



No. 122—For Two Razors; Wood Case Covered with Black Russia Leather; Silk and Plush Lined; Assorted Colors; Spring Hinge Lid; Nickel Plated Sliding Clasp; Size 7⅜ x 3½ x 1¾ inches; Weight per Dozen 4¾ lbs. ..... Per Dozen **$19.00**

No. 172—For Two Razors; Solid Polished Oak; Silk and Plush Lined; Assorted Colors; Hinged Lid; Nickel Plated Sliding Clasp; Size 7 x 3⅜ x 1¾ in.; Wt. Dozen 5¼ lbs. . Per Dozen **30.00**



No. 134—For Four Razors; Wood Case Covered with Black Russia Leather; Silk and Velvet Lined; Assorted Colors; Spring Hinge Lid; Nickel Plated Sliding Clasp; Size 7 x 2½ x 2¾ inches; Weight per Dozen 3 lbs. ..... Per Dozen **$30.00**

No. 72—For Seven Razors; with Days of Week Printed in Gold; Wood Case Covered with Black Morocco; Silk and Velvet Lined; Assorted Colors, Hinged Lid; Nickel Plated Sliding Clasp; Size 7 x 3¾ x 1½ in.; Wt. Dozen 5¼ lbs . Per Dozen **$40.00**

No. 167—For Seven Razors; with Days of Week Printed in Gold; Wood Case Covered with Black Russia Leather; Plush Lined; Assorted Colors; Hinged Lid with Flap and Two Glove Fasteners; Size 7 x 3¾ x 1½ inches; Weight per Dozen 6¾ lbs. ..... Per Dozen **$50.00**

Twelfth Dozen in a Box

SHAVING OUTFITS AND MIRRORS

These Outfits are put up in Fancy Cardboard Cases, Divided into Separate Compartments for Razor, Strop, Brush and Soap; Size of Case 12 x 4¼ x 1¾ inches.

Each

No. MB5 Contains One No. M5 Mizzoo Razor; ⅝ inch, Square Point; Plain Black Rubber Oval Handle, Full Concaved Ground Blade; Glazed; Flat File Tang; One Double Swing Strop, Length 24 inches, Width 2¼ inches; Canvas and Leather; Stitched Barber Handle; Nickel Plated Single Loop Swivel; One Sta-Fast Shaving Brush; Black Chinese Hog Bristles, Nickel Plated Ferrule, Red Stained Hardwood Handle; Length Over All 5 inches; One Cake Williams' Mug Shaving Soap; Weight 1 lb $2 00

SHAVING MIRROR, MUG AND BRUSH WITH STAND

Nickel Plated Brass Stand; Diameter of Base 5 inches; 5¼ inches Double Revolving Mirror, One Side Plain, Other Side Magnifying; White Porcelain Mug in Nickel Plated Brass Holder; Composition Set, Fine Pure White French Bristle Brush, Boxwood Handle; Held in Clamp on Frame Upright.

Per Set

No. 10MB—Shaving Mirror and Brush Set; Height Over All 12¾ inches Weight per Set 2½ lbs $5.00
One Set in a Box

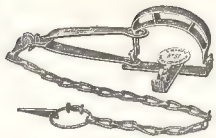
ALL-VIEW PORTABLE MIRROR

The Most Convenient Toilet Necessity Ever Devised. Fits Comfortably Over Either Broad or Narrow Shoulders and is Held Firmly in Position by the Flexible Nickel Steel Shoulder Straps; When so Adjusted any Angle can be Obtained, Leaving Both Hands Free for Shaving, Hair Dressing or any Other Toilet Arrangement. It is Especially Appreciated by Ladies in Arranging their Back Hair, as a Perfect View of the Back of the Head is Obtainable. The Man who Shaves also Prizes it, as he can get just the Right Light to See his Face from every Viewpoint Around the Ears, Under the Chin, and that Hitherto Almost Impossible Feat of Shaving the Back of the Neck Becomes as Easy and Safe as Shaving the Face. It can also be Hung Up as a Wall Mirror, Set on a Stand in any Position, and the Same Variety of Angles Obtained.

Per Dozen

No. AV10—Beveled Glass Mirror on One Side; Burnished Metal Mirror on Reverse Side, Diameter 6¼ inches; Jointed Steel Frame and Rods; Nickel Plated and Polished; Size Folded 6¾ x 9¼ x 1¼ inches; Weight per Dozen 18 lbs. $42 00
Twelfth Dozen in a Box

STEEL TRAPS



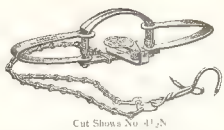
GENUINE NEWHOUSE, DOUBLE JAW

For Muskrat, Skunk, Mink, Fox and Woodchuck; the Wide Faces of the Double Jaws Take a Firm, Easy Grip, so High Up on the Animal's Leg, that it is Impossible for Him to Twist Out or Gnaw His Leg Off.

Flat Crucible Steel Spring; Steel Chain with Ring

Nos.	81N	81½N
Spread of Jaws, Inches	5½	6½
Length of Chain, Inches	16	18
Weight per Dozen, Lbs	10½	13
Per Dozen	$6 00	9 60
	5 70	8 60

15 to 25 Dozen in a Barrel



Cut Shows No. 81½N

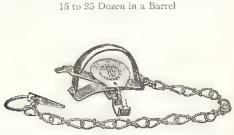
GENUINE NEWHOUSE WOLF TRAPS

Especially Adapted for Catching Wolves and Similar Animals; the No. 4½N has a Pronged Drag, Warranted to Hold 2,000 lbs.; the No. 04½N has Ring and Snap

Flat Crucible Steel Springs; Extra Heavy Steel Chain and Snap

Nos.	04½N	4½N
Spread of Jaws, Inches	5	6
Length of Chain, Feet	6	6
Weight per Dozen, Lbs	55	100
Per Dozen	$40 00	40 00
	38 00	38 00

Two and One-half Dozen in a Barrel



JUMP TRAPS, WITH STEEL WIRE CHAIN

Jump Traps are Lighter than Other Styles, Easy to Carry and Lie Very Flat in the Runway; They are Very Easily Secreted; the Jaws Have Full, Wide Meeting Places, which Seldom Break the Animal's Leg

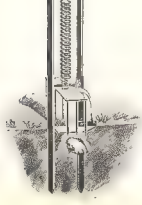
SINGLE SPRING

	Per Dozen
No. 0J —Rat and Gopher, Spread of Jaws 3⅞ inches, Weight per Dozen 4¾ lbs. $2 50	$4.25
40 to 60 Dozen in a Barrel	
No. 1J —Muskrat; Spread of Jaws 4¾ inches; Weight per Dozen 6¾ lbs. 2 90	5.00
30 to 40 Dozen in a Barrel	
No. 1½J —Mink; Spread of Jaws 5⅜ inches, Weight per Dozen 7½ lbs. 4.30	7.50
25 to 30 Dozen in a Barrel	

DOUBLE SPRING

	Per Dozen
No. 2J Coon or Skunk; Spread of Jaws 6½ inches, Weight per Dozen 9½ lbs. $6 00	$10 50
15 to 20 Dozen in a Barrel	
✣ **No. 3J—Fox or Otter**; Spread of Jaws 8 inches, Weight per Dozen 16 lbs. 8 00	14 00
10 to 15 Dozen in a Barrel	
✣ **No. 4J Otter or Wildcat**; Spread of Jaws 9 inches, Weight per Dozen 12 lbs. 9.50	16.50
8 to 12 Dozen in a Barrel	

MOLE TRAPS



REDDICK

	Per Dozen
No. RM Tinned Steel Frame, Prongs and Lever; Japanned Steel Coil Spring, Height Over All 24 inches, Width 4 inches; Six Prongs 4¾ inches Long, Full Directions for Operating with Each Trap; Weight per Dozen 40 lbs.	**$12 00**

Half Dozen in a Crate

LITTLE GIANT

Self Setting

Trap is Set by Pulling up Plunger Rod, Trigger Catches Itself

	Per Dozen
No. LGM Cold Rolled Galvanized Steel Frame, Prongs and Lever; Japanned Steel Coil Spring, Height 15 inches, Width 4 inches; Six Prongs 5 inches Long; Weight per Dozen 24 lbs.	**$12 00**

Half Dozen in a Crate

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

TRAPS

GOPHER

O. K.

Per Dozen

No. OK—Steel Wire Spring; Coppered Steel Jaw, the Trigger and Other Metal Parts are Galvanized Steel; Red Stained Soft Wood Box, Strongly Nailed, Length 6¾ inches; Width 4 inches; Height 3 inches; Height Over All 6 inches; Weight per Dozen 8 lbs. **$3.60**

One Gross in a Case

NEWHOUSE

Catches the Animal Around the Neck and Kills Surely and Quickly

Per Dozen

No. G—Tempered Flat Steel Spring; 1 inch Wide, Natural Finish; 3 inch Ring; Flat Steel Trigger; Length 6 inches; Height 3½ inches; Weight per Dozen 2¾ lbs. **$3 30**

One Dozen in a Box

FLY

PARAGON

Per Dozen

No. 2P Black Wire Cloth Body Braced with Tin Strips, Tin Bottom and Top; Height 9½ inches; Diameter at Bottom 6¼ inches, Weight per Dozen 4½ lbs. **$3 00**

One Dozen in a Box

BALLOON

Per Dozen

No. 3B—Blued Wire Cloth Body; Tin Bound Edges; Height 7¾ inches; Diameter of Body 6¾ inches; Weight per Dozen 2¾ lbs. **$2 80**

One Dozen in a Box

FLY KILLERS

BIGELOW PATTERN

Per Dozen

No. B—Tinned Wire Head, Broom Shape; Size 5x4¼ inches; Black Enameled Hardwood Handle; Brass Ferrule; Length Over All 15 inches; Weight per Dozen 2 lbs. **$2 00**

One Dozen in a Box

DOUGLAS

Per Dozen

No. D Black Wire Cloth Head, Imitation Leather Bound; Size 4x3 inches; Flat Wood Handle, Varnished; Length Over All 16¾ inches; Weight per Dozen 1 lb. **$1 80**

One Dozen in a Box

KING

Per Dozen

No. K—Wire Head; Size 5x6½ inches; Selvage Edge on Sides; Leather Bound End; Black Enameled Handle; Length Over All 18 inches; Weight per Dozen 2¼ lbs. **$1.80**

One Dozen in a Carton, with Display Stand

CHAMPION

Per Dozen

No. C Wire Head; Size 4½x6 inches; Selvage Edge on End; Tinned, Twisted Wire Handle, Length Over All 12½ inches; Weight per Dozen ⅝ lb. **$1.00**

One Dozen in a Box

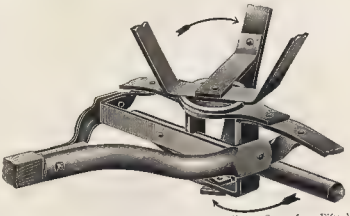
BOYS STEEL WAGONS

*NORLEIGH DIAMOND

Cut shows Norleigh Diamond Fifth Wheel and Gear, which is the strongest and most practical.

It is different from all others. Made from extra heavy 10 gauge Steel. Others use light 12 or 14 gauge.

We use 7-16 inch Steel Axles—ordinary wagons have 3-8 inch.

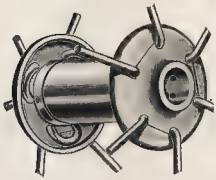


The top part of the Fifth Wheel is turned or welded (not riveted) around the lower part.

Has three Reinforcing Braces: one runs from bed to extreme bottom part of Fifth Wheel, one from top of Fifth Wheel to Rear Brace, and the other from bottom of Fifth Wheel to Handle Iron.

This construction makes it possible for the Norleigh Diamond Fifth Wheel and Gear to support a weight of more than 200 pounds, while others crush down under 100 pounds.

Note the Brace that Runs from Bed to Tongue Iron thus Relieving Strain from Fifth Wheel.



Cut shows "New Idea" large barrel anti-friction roller bearing hub, used on Norleigh Diamond Wagons.

Cut shows old-fashioned small Spindled Hub used on all other Boys' Wagons.

Cut shows width and thickness of Norleigh Diamond Tires.

Cut shows Tongue and "New Idea" Steel Loop used on Norleigh Diamond Wagons.

Cut shows Tongue and Pin used on other Wagons.

Cut shows Tires used on other Wagons.

Four 1¼ inch Reinforcing Cleats used on all of the six largest sizes of Norleigh Diamond Wagons.

Cut shows Hub Cap furnished on Norleigh Diamond Wagons.

Norleigh Diamond "New Idea" Packing. Steel Tired Wagons Quarter dozen in a Crate, all **carefully wrapped** in extra heavy paper to preserve Enamel. Crates are made of heavy material, well braced, and thoroughly protect Wagons in transit.

Rubber Tired Wagons One in a Box.

Steel Washers under head of the Bed Bolts prevent the Bolts from being forced through the bed bottom.

Cut shows common Iron Axle Nut furnished on other Wagons.

BOYS STEEL WAGONS

*NORLEIGH DIAMOND

"Norleigh Diamond" High Grade Boys' Wagons are Original in Construction and Distinctive in Appearance. They are Better Ironed, Better Finished and Much Stronger than any Other.

Finished in Three Combinations of Colors with Gold Letters and Decorations as follows.

Red Outside, Green Inside, Green Gear and Wheels
Green Outside Red Inside, Red Gear and Wheels
Blue Outside, Black Inside, Black Gear and Wheels

Rubber Tired Wagons; One in a Box.

Steel Tired Wagons; Three in a Crate, Assorted; One of Each Color; We do not Break Crates.

Tongue—Mad. of Select Closely Grained Hard Wood, Finished in Oil. Fitted with **New Idea Patent Loop Hand Hold.**

STEEL TIRES

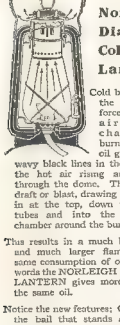
RUBBER TIRES

Gear—Extra Heavy, Ten Gauge Strap Steel; Enameled to Match Wheels; Improved Style Reinforcing Brace in Rear Axle; Extra Strong Fifth Wheel Braces (See Page 337).

Bed 24 Gauge Steel; Reinforced at Top with Heavy Wire; Extra Deep; Double Beaded Sides.

AD-UNITS

Order by Number



Burn Air

Use a Norleigh Diamond Cold Blast Lantern.

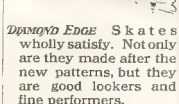
Cold blast, because the cold air is forced into the air mixing chamber and burns with the oil gases. The wavy black lines in the globe show the hot air rising and escaping through the dome. This creates a draft or blast, drawing the cold air in at the top, down through the tubes and into the air mixing chamber around the burner.

This results in a much better flame and much larger flame with the same consumption of oil. In other words the NORLEIGH DIAMOND LANTERN gives more light with the same oil.

Notice the new features: Cold handle, the bail that stands alone, extra heavy tubes, the perfect clug globe guard, the extra large air chamber, the big brass oil hole, the lock lift and a new steel burner that insures the longest possible life.

Don't go home in the dark. Buy a Norleigh Diamond Lantern.

No. A304



DIAMOND EDGE Skates wholly satisfy. Not only are they made after the new patterns, but they are good lookers and fine performers.

And you can feel safe on *DIAMOND EDGE* Skates. They are built to stand every test—to carry top weight and to fasten securely.

For ladies and gentlemen; for every purpose and of every style.

No. A329

BASKET BALL IS GENUINE SPORT

It drives away care, worries, lonesomeness and brings out the best in man or woman, boy or girl.

Give nature a chance, free your mind and muscle in this delightful exercise. You'll get up next morning with a clear brain and eager for the day's work.

No. A314

THE BAIL STANDS ALONE

IN THE

NORLEIGH DIAMOND LANTERN

This feature you will appreciate when you try to hang them up. It is just these little things that make the NORLEIGH DIAMOND LANTERN so good. For instance the oil holes are big, no funnel necessary. Can be lit with one hand. When the globe is raised it is locked, when down locked, a lantern that never fails you. Don't go home in the dark. Buy a NORLEIGH DIAMOND LANTERN.

No. A...

Whitewash Brushes

The reason that every family should have a whitewash brush is that they will do their white-

washing at the time it should be done

[illegible] time you say "If I only had a brush I would do that now." Don't wait. Buy one the first [illegible]

No. A...

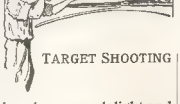
NORLEIGH DIAMOND LANTERN

Why do you buy a lantern? Too many people buy lanterns with the wrong thought of economy. Buy it because it is priced low. In three months it is in the junk. It can't be depended upon.

Resolve in your mind right now to buy a good lantern hereafter, a lantern that actually gives light, that lasts indefinitely, that has the style, the class and the appearance that you are proud of in any company.

Don't go home in the dark. Buy a Norleigh Diamond Lantern.

No. A328



TARGET SHOOTING

is a pleasure, a delight, and appeals to all of us, more or less.

Why not own a Rifle of your own? Why not practice up and show your prowess? It's sport—and appeals to red-blooded people everywhere.

May we have the pleasure of showing you the new things in Rifles?

No. A330

Out at Oyster Bay our "Illustrious Colonel" still swings his trusty axe occasionally. Did you think that was only a presidential prerogative?

No, but a good axe is a fine developer of a good character. It also serves other useful purposes.

We cannot say with certainty whether T. R. uses a *DIAMOND EDGE* Axe, but this we know—a *DIAMOND EDGE* Axe would bring to his face, as it does to the face of every good axe man, a smile of satisfaction in the possession of the best.

No. A332

A SWELL GO-CART

High sides, full size hood that will set at an angle—one-piece tubular push and side bar—extra heavy wheel forks and 12-inch wheels, instead of the usual 10-inch wheels. Large rubber tires; such are the general merits of the above go-cart.

It folds down to a very small and compact size, making it the most convenient go-cart made. Is a beauty in every respect and strictly stylish.

No. A334

COMPLETE THE ARGUMENT

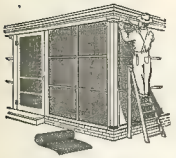
As a Rule Ad-units have a descriptive argument intended to arouse the readers interest and appeal to their imagination. It is up to the user of the Ad-unit to complete the Argument by adding such facts as may bear on the case.

"DIAMOND EDGE IS A QUALITY PLEDGE"

AD-UNITS

Order by Number

SCREEN YOUR PORCHES



You know and appreciate the value of door screens and window screens, but have you considered how very comfortable the porch would be this summer if screened?

Call and let us explain the value of the different kinds of screen wire, such as the black, the galvanized, the bronzed,

By the way, bronze wire is becoming more and more popular. The price is lower than ever before by almost half. The copper wire cloth lasts indefinitely as it never rusts under any circumstances,

No. A305

BASE BALL GOODS

Do you want the latest in gloves, in mitts, in masks? Do you want the very patterns that the professionals use?

You can't do your best with bum balls, bats, gloves, masks, etc., any more than you can work your best with bum tools. Get the good kind.

No. A235

THIS IS THE CONCRETE AGE

What they will next be doing with concrete is beyond our imagination. The Pennsylvania Railroad is now making concrete telegraph poles, and Edison moulds you a concrete house in seven hours!

The uses of concrete have developed a new manufacturing industry—the making of Concrete Tools—that is, tools for workers in concrete.

As has been true of all *Diamond Edge* Tools, *Diamond Edge* Concrete Tools are of the best design and of the highest quality.

The best tools are none too good for good workmen.

No. A236

ALL KINDS OF SCOOPS

A Grain Scoop is a different kind of article from a ditching spade or a coal shovel—that is, if it is made right.

With a Grain Belt Scoop you can move more grain, and do it more easily, than with inferior kinds, that neither hang right nor are shaped to hold the grain,

To handle grain and save your temper, use a Grain Belt Scoop.

No. A237

THEY DON'T GROW BALD

Did you ever try to paint with a brush that was shedding at the time? When you got through the brush was bald, and the wall you painted had a coat of fur on.

That's no way to paint—and to buy a 10c paint brush is no way to show your good judgment.

A good paint brush, properly cared for, will last for years.

We have all styles and sizes of good Paint and Varnish Brushes.

No. A238

THE BAN IS ON THE BEARD

The house-fly will have to go. He cannot withstand the odious publicity he has been getting.

And now it begins to look as if all men with beards will be quarantined. Every beard, they tell us, is a nest for germs.

Shave, brother, shave.

To shave you need a razor. To shave with comfort you need a razor that will stay sharp. You can't get a good razor for $1 50—neither is it necessary for you to pay $5.00 for one.

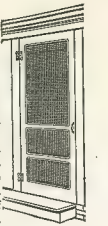
Diamond Edge Razors at $2.60 and $3.00 are as good as you can buy. Pay less and you get a poor razor; pay more and you are extravagant.

No. A239

AD-UNITS ARE

FREE TO CUSTOMERS

Screen Doors



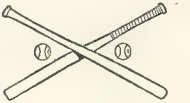
Note the plain, simple, yet elegant design of this door. It is the **Black Prince**—the Prince of all screen doors. Black because finished with three coats of black enamel paint, giving that rich and elegant ebony finish.

The frame of this door is made of the highest grade material and is put together by hand. Every mortise and tenon fits accurately. Notice that it has two stiles or cross bars placed low to protect the wire.

The economy of this door is in its lasting qualities.

No. A306

BASE BALL SUPPLIES



Until you come and see our line of base ball goods you can't know just how well we can care for your needs.

Be a good sport; come and have a look.

No. A240

CLOTHES WRINGER ASSORTMENTS

WITH DISPLAY STANDS

Stands are Strongly Made of Hardwood, Finished in Bright Colors and Gold Lettering; with Strong Cast Iron Bases Attractively Decorated in Bright Colors and Mounted on Ball Bearing Casters. Brass Hooks for Hanging Wringers.

12 Wringer Assortment with Rack No. 17

TWELVE WRINGER ASSORTMENTS

Especially Adapted for Large Stores or Display Rooms. Height of Stand 6 feet; Occupies 41x20 inch Floor Space.

Per Assortment

No. 12A—Consists of Rack No. 17 and **12 Wringers** as Specified Below; Weight Complete 320 lbs. **$77.80**

Contains the Following Wringers:

1 No. R591 —Royal	1 No. U350—Universal	1 No. K310—Keystone
1 No. R600 —Royal	1 No. U351—Universal	1 No. R101—Rival
1 No. R600E—Royal	1 No. N301—Novelty	1 No. R191—Rival
1 No. R501 —Royal	1 No. N300—Novelty	1 No. F10—Falcon

Per Assortment

★**No. 12B**—Consists of Rack No. 17 and **12 Wringers** as Specified Below; Weight Complete 320 lbs. **$71.80**

Contains the Following Wringers:

1 No. N167—Newhouse	1 No. T 50—Tip Top	1 No. M 63—Merrimac
1 No. N188—Newhouse	1 No. T 51—Tip Top	1 No. M 73—Merrimac
1 No. N177—Newhouse	1 No. T180—Tip Top	1 No. M110—Mizzoo
1 No. N178—Newhouse	1 No. T181—Tip Top	1 No. M111—Mizzoo

Per Assortment

No. 12C—Consists of Rack No. 17 and **12 Wringers** as Specified Below; Weight Complete 320 lbs. **$69.50**

Contains the Following Wringers:

1 No. E350—Empire	1 No. R100 —Rival	1 No. R191—Rival
1 No. U350—Universal	1 No. R101 —Rival	1 No. R192—Rival
1 No. K310—Keystone	1 No. N300E—Novelty	1 No. F 10—Falcon
1 No. N300—Novelty	1 No. R190 —Rival	1 No. F 11—Falcon

SIX WRINGER ASSORTMENTS

Height of Stand 6 feet; Occupies 20x20 inch Floor Space; Mounted on Casters

Per Assortment

★**No. 6A**—Consists of Rack No. 14 and **6 Wringers** as Specified Below; Weight Complete 190 lbs. . **$38.50**

Contains the Following Wringers:

1 No. N167—Newhouse	1 No. M63—Merrimac	1 No. T50—Tip Top
1 No. N177—Newhouse	1 No. M73—Merrimac	1 No. T51—Tip Top

Per Assortment

No. 6B—Consists of Rack No. 14 and **6 Wringers** as Specified Below; Weight Complete 190 lbs. . . **$34 50**

Contains the Following Wringers:

1 No. U350—Universal	1 No. N301 —Novelty	1 No. R100—Rival
1 No. E350—Empire	1 No. K311—Keystone	1 No. F10—Falcon

Per Assortment

★**No. 6C**—Consists of Rack No. 14 and **6 Wringers** as Specified Below; Weight Complete 190 lbs. **$30.00**

Contains the Following Wringers:

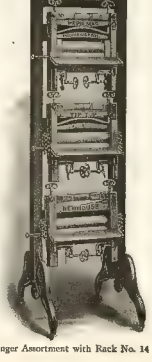
1 No. M63—Merrimac	1 No. T51 —Tip Top	1 No. M110—Mizzoo
1 No. T50—Tip Top	1 No. T180—Tip Top	1 No. M111—Mizzoo

Per Assortment

No. 6D—Consists of Rack No. 14 and **6 Wringers** as Specified Below; Weight Complete 190 lbs. . **$40 60**

Contains of the Following Wringers:

1 No. R501—Royal	1 No. U351—Universal	1 No. R101—Rival
1 No. R591—Royal	1 No. U381—Universal	1 No. R191—Rival



6 Wringer Assortment with Rack No. 14

Stand Crated; Wringers Cased

BICYCLE LAMPS

OIL

SOLAR

Solar Lamps are made of Heavy Gauge Sheet Brass; Nickeled and Polished; Height 6¼ inches; 2½ inch Convex Lens; Red and Green Jewel Side Lights; Oil Capacity ½ pint.

Each

No. 60SO—Weight Each 1¾ lbs. **$2.70**

20TH CENTURY

Lamps are all Brass, Except the Clamps, which are Steel; Nickeled and Polished; Height 6½ inches; 2¾ inch Convex Lens; Large Colored Side Lights; Aluminum Parabola Reflector; Burns 12 hours

Each

No. 40CO—Weight Each 1½ lbs. **$3 20**

COLUMBIA

Columbia Lamps have Heavy Brass Bodies and Steel Clamps; Nickeled and Polished; Height 6 inches; 2¾ inch Convex Lens; Red and Green Side jewels; Burns about 10 hours.

Each

No. 50CO—Weight Each 1¾ lbs.. **$2 80**

JIM DANDY

Jim Dandy Lamps have Brass and Steel Parts; all Nickeled and Polished; Height 4¾ inches; 2¾ inch Convex Lens; Red and Green Side Lights; Burns about 8 hours.

Each

No. 1201 Weight Each ¾ lb..... **$1 60**

One in a Box

LIGHT WEIGHT

Light Weight Lamps are made of Sheet Steel; Heavily Nickeled and Polished; Height 5½ inches; 2½ inch Convex Lens; Red and Green Side Jewels; Burns about 10 hours.

Each

No. 50LO—Weight Each ¾ lb..... **$1 80**

BICYCLE LAMP BRACKETS

COMMON HEAD

Heavy Steel Clamp with Thumb Adjusting Screw; Double Wire Lamp Support; Nickel Plated; Clamp Felt Lined to Protect Enamel; Fits 1¼ to 1⅜ inch Heads.

Per Dozen

No. 4—Weight per Dozen 1¾ lbs.... **$2 00**

SOLAR HEAD OR FORK

Heavy Sheet Brass; Nickel Plated and Polished, Adjustable to any Position; Fits any Size Head or Fork; Clamps Felt Lined to Protect Enamel.

Each

No. SH—Weight Each 5 ozs. **$1 20**

SOLAR DASH

This Bracket is Used for Converting a Bicycle Lamp into a Buggy Lamp; made of Heavy Sheet Brass, Nickel Plated; Adjustable to Either Side of Dash.

Each

No. SD—Weight Each 9 ozs.....**$1.20**

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

✠BICYCLE LAMP PARTS

FOR MODEL O SOLAR GAS

		Each
No. B	—Screen Tube; Weight 1 oz.	$0 20
No. B1	—Screen Tube Plate; Weight 1 oz.	.20
No. B2	—Carbide Spring; Weight 1 oz.	.20
No. C	—Washer Plate; Weight 1 oz.	.10
No. C1	—Washer Plate Nut.	.10
No. D	—Rubber Washer.	.10
No. E	—Fibre Washer.	.10
No. F	—Wick Tube Cap; Weight 1/2 oz.	.10
No. F1	—Wick Tube; Weight 1 oz.	.20
No. G	—Water Valve; Weight 1/2 oz.	.50
No. G1	—Valve Washer and Nut	.10
No. H	—Filler Cap; Weight 1/2 oz.	.30
No. H1	—Cap Washer.	.06
No. I	—Tip Holder; Weight 1/2 oz.	.20
No. J	—Tip; Weight 1/2 oz.	.40
No. K	—Ratchet Screw; Weight 1/2 oz.	.20
No. L	—Reflector; Weight 1 oz.	$0 20
No. M	—Jewel, Red or Green; Weight 1 oz.	.30
No. M1	Lens Door; Weight 2 ozs.	.40
No. M2	—Lens; Weight 1 3/4 ozs.	.50
No. N	—Bracket, Complete; Weight 6 ozs.	1 40
No. O	—R. H. Bracket Side; Weight 2 ozs	.30
No. O1	L. H. Bracket Side; Weight 2 ozs	.30
No. P	Clamp Thumb Screw, Weight 2 ozs	.20
No. Q	—Thumb Screw Nut; Weight 1/2 oz.	.10
No. R	—Carbide Tank; Weight 3 ozs	.80
No. S	—Ratchet Screw Nut	.10
No. T	Pivot Bolt, Weight 1/2 oz	.20
No. U	Pivot Bolt Nut.	.10
No. V	—Ratchet Arm; Weight 2 ozs.	.30
No. W	—Bracket Lining.	.10

Each

NOTE.—Always Specify Model of Lamp When Ordering

Loose

FOR TWENTIETH CENTURY GAS

		Each
No. 1	—Clear Front Glass; Weight 2 ozs	$0 30
No. 2	—Red Front Glass; Weight 2 ozs	.40
No. 3	—Green Front Glass; Weight 2 ozs.	.40
No. 4	—Front Glass Circle Wire; Weight 3/5 oz.	.10
No. 61	—Lava Tip with Mender Can; Weight 1 oz.	.40
No. 63	—Aluminum Reflector; Weight 3/5 oz.	.40
No. 65	—Reflector Wire; Weight 3/5 oz.	.10
No. 66	—Door Hinge and Rivets; Weight 1 oz.	.20
No. 67	—Door Catch and Rivets; Weight 1 oz.	.30
No. 68	—Screw Water Stopper; Weight 1/2 oz.	.20
No. 69	—Water Valve Rod; Weight 1 oz	.30
No. 70	—Water Valve Arm; Weight 3/5 oz	.20
No. 71	—Water Valve Octagon Nut.	.20
No. 72	—Water Valve Leather.	.10
No. 75	—Felt Screen Cap.	.10
No. 76	—Gasket (Embeds Carbide Cap).	.10
No. 77	—Thumb Screw Washer.	$0 10
No. 79	—Wing Nut Bolt; Weight 1 oz.	.20
No. 80	—Door and Glass; Weight 4 ozs.	1 00
No. 81	Framed Side Jewel; Weight 1 oz	.30
No. 82	—Chimney Cap; Weight 1 oz.	.30
No. 83	—Reservoir Plate; Weight 1 oz.	.30
No. 85	—Body, Including Parts Nos. 60, 80, 82 and 83; Weight 12 ozs.	2.00
No. 86	—Carbide Chamber; Weight 3 ozs	.80
No. 87	—Bottomless Cup; Weight 2 ozs.	.40
No. 88	—Cloth Cover Tube; Weight 1 oz.	.30
No. 89	—Spring Double Disc; Weight 1 oz.	.30
No. 90	—Bottom Thumb Screw; Weight 1 oz.	.40
No. 91	—Band and Wing Nut Bolt; Weight 1 oz.	.80
No. 92	—Wing Nut Bolt; Weight 1 oz	.30
No. 94	—Water Reservoir; Weight 4 ozs.	2 00

Each

Loose

CALCIUM CARBIDE

For Use in Bicycle, Motor Cycle or Automobile Lamps; is Safe, Clean and Portable; when Water Comes in Contact with Same, a Clear White Light is Formed.

		Per Can
No. 2	—2 lb. Cans; Twenty-four in a Case; Weight per Case 64 lbs.	$0.86
No. 10	—10 lb. Cans; Six in a Case; Weight per Case 72 lbs.	1.60
No. 100	—100 lb Drums.	8.20

Loose

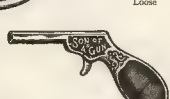
BURNER TIPS

For All Makes of Bicycle Gas Lamps. These Parts Burn Out in a Short While, therefore it is well to carry a Stock of them to Satisfy those Customers who Think their Lamp is Defective, when in Reality their Lamp Tip is Clogged up.

		Per Dozen
No. 100	—Weight per Dozen 1 oz.	$2.00

Loose

AMMONIA GUNS



Per Dozen

No. 1SG—Nickel Plated and Polished: Can be Reloaded Indefinitely; Length 5 inches; Weight per Dozen 4 lbs. $9.60

Per Dozen

No. USA—Durable, Reliable and Perfectly Safe; Guarded Trigger; Nickel Plated and Polished; Length 5 inches; Weight per Dozen 4½ lbs. $9.60

Per Dozen

Wizard—Substantially Made; No Danger of Leaking; Guarded Trigger, Nickel Plated; Length 5 inches; Weight per Dozen 6 lbs. $11 00

Per Dozen

Sokum—Nickel Plated and Polished Barrel; Rubber Bulb, to Contain Liquid, Forms the Grip; Operated by Squeezing the Grip; Length 4½ inches, Weight per Dozen 2 lbs. $5.00

One in a Box; One Dozen in a Carton

✠Not Carried in Stock; Can Only Be Furnished By Shipping Direct from Factory

PEARL REVOLVER HANDLES

NOTE—These Handles are Extra Selected, and add Greatly to the Appearance of any Revolver. They are Filed and Fitted to Interchange with the Regulation Rubber Stocks as are Supplied on Revolvers of Standard Manufacture. They are Equipped with Assembling Screw, Threaded and can Usually be Adjusted Without any Filing.

Cuts Full Size

FOR DOUBLE ACTION REVOLVERS

Per Pair

No. 1—For Young America, 22 Caliber; Weight per Pair 1 oz. **$2.30**

No. 2—For Young America and Vest Pocket, 32 Caliber; Weight per Pair 1 oz. **2.30**

No. 3—For American Double Action and Safety Hammer, 32 Caliber; Weight per Pair 1¼ ozs. **2.80**

No. 4—For American Double Action and Safety Hammer, 38 Caliber; Weight per Pair 1½ ozs.. **2.80**

FOR HARRINGTON & RICHARDSON REVOLVERS

Per Pair

No. 5—For Premier Automatic, 22 Caliber; Weight per Pair 1 oz. **2.80**

No. 6—For Premier Automatic, 32 Caliber; Weight per Pair 1 oz. **2.80**

No. 7—For Automatic Hammer, 32 Caliber; Weight per Pair 1½ ozs. **2.80**

No. 8—For Automatic Hammer, 38 Caliber; Weight per Pair 1½ ozs. **2.80**

No. 9—For Automatic Hammerless, 32 Caliber; Weight per Pair 1½ ozs.. **2.80**

No. 10—For Automatic Hammerless, 38 Caliber; Weight per Pair 2 ozs.. **2.80**

FOR IVER JOHNSON REVOLVERS

Per Pair

No. 11J—For Automatic Hammer, 22 Caliber; Weight per Pair 1½ ozs.. **$2.80**

No. 11—For Automatic Hammer, 32 Caliber; Weight per Pair 1½ ozs **2.80**

No. 12—For Automatic Hammer, 38 Caliber, Weight per Pair 2 ozs.... ... **2.80**

No. 13—For Automatic Hammerless, 32 Caliber; Weight per Pair 1½ ozs.. **2.80**

No. 14—For Automatic Hammerless, 38 Caliber; Weight per Pair 2 ozs.... **2.80**

FOR SMITH & WESSON REVOLVERS DOUBLE ACTION AND HAMMERLESS

Per Pair

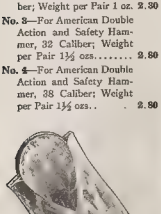
No. 15—For Double Action, 32 Caliber; Weight per Pair 1 oz. **$2 80**

No. 16—For Double Action, 38 Caliber; Weight per Pair 1¼ ozs. **2 80**

No. 17—For Hammerless, 32 Caliber; Weight per Pair 1½ ozs. **2.80**

No. 18—For Hammerless, 38 Caliber; Weight per Pair 1½ ozs. **2 80**

No. 19—For Double Action, 44 Caliber; Weight per Pair 3 ozs. **7 00**



FOR SMITH & WESSON REVOLVERS, MODELS 1902 AND 1903

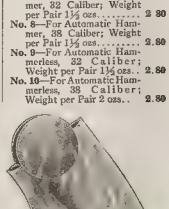
Per Pair

No 20—For Model 1902, 32 Caliber; Weight per Pair 1 oz. **$2.80**

No. 21—For Model 1903, 32 Caliber; Weight per Pair 1½ ozs **2.80**

No. 22—For Model 1902, 32 Caliber; Weight per Pair 2½ ozs. **7.00**

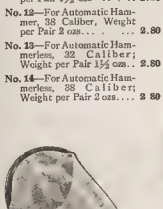
No. 23—For Model 1902, 38 Caliber; Weight per Pair 2½ ozs. **7.00**



FOR SMITH & WESSON REVOLVERS, MODEL 1905

Per Pair

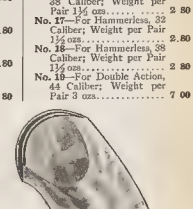
No. 24—For Model 1905, 32 and 38 Caliber; Weight per Pair 3 ozs. . **$8.00**



FOR COLT NEW POCKET POSITIVE REVOLVERS

Per Pair

No. 32—For Colt New Pocket Positive, 32 Caliber; Weight per Pair 2 ozs.. **$4.50**



FOR COLT NEW SERVICE AND NEW POLICE POSITIVE REVOLVERS

Per Pair

No. 29—For Colt New Service, all Calibers; Weight per Pair 4 ozs **$14.50**

No. 30—For Colt New Police Positive, all Calibers; Weight per Pair 2 ozs.. **5.00**

One Pair in an Envelope

"DIAMOND EDGE IS A QUALITY PLEDGE"

PEARL REVOLVER HANDLES

NOTE.—These Handles are Extra Selected, and Add Greatly to the Appearance of any Revolver. They are Filed and Fitted to Interchange with the Regulation Rubber Stocks as Supplied on Revolvers of Standard Manufacture. They are Equipped with Assembling Screw, Threaded, and can Usually be Adjusted without any Filing.

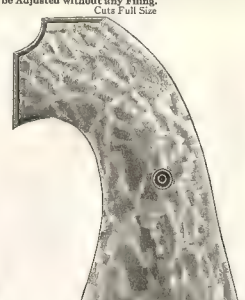
Cuts Full Size

FOR COLT ARMY SPECIAL AND OFFICER'S MODEL REVOLVERS

Per Pair

No. 31—For Colt Army Special, all Calibers; Weight per Pair 3 ozs. $7.50

No. 31½—For Colt Officer's Model, 38 Caliber, Weight per Pair 3½ ozs.. 7.50



FOR COLT SINGLE ACTION BISLEY REVOLVERS

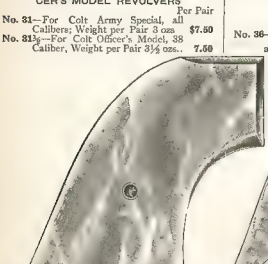
Per Pair

No. 36—For Colt Single Action Bisley, all Calibers; Weight per Pair 5 ozs. $17.50

FOR COLT DOUBLE ACTION ARMY REVOLVERS

Per Pair

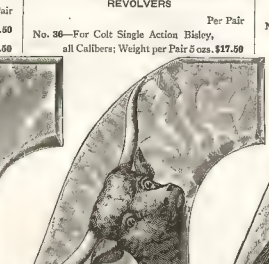
No. 34—For Colt Double Action Army, 44 and 45 Caliber; Weight per Pair 3½ ozs. $8.00



PLAIN
FOR COLT SINGLE ACTION ARMY REVOLVERS

Per Pair

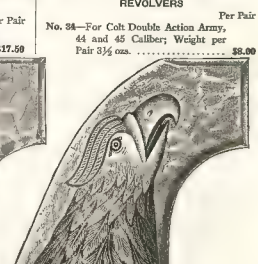
No. 35—For Colt Single Action Army, all Calibers; Weight per Pair 4 ozs..$16.00



STEER HEAD
FOR COLT SINGLE ACTION ARMY REVOLVERS

Per Pair

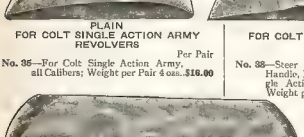
No. 38—Steer Head Carved on Right Handle, Left plain; for Colt Single Action Army, all Calibers; Weight per Pair 4½ ozs. $18.00



EAGLE HEAD
FOR COLT SINGLE ACTION ARMY REVOLVERS

Per Pair

No. 37—Eagle Head Carved on Right Handle, Left plain; for Colt Single Action Army, all Calibers; Weight per Pair 4½ ozs..... $25.00



FOR COLT AUTOMATIC PISTOLS

Per Pair

No. 25 —For Pocket Model, 32 Caliber; Weight per Pair 2 ozs $10.00

No. 25½—For Pocket Model, 25 Caliber; Weight per Pair 2 ozs..... 10.00

No. 26 —For Pocket Models, 38 and 380 Caliber; Weight per Pair 3 ozs. 11.50

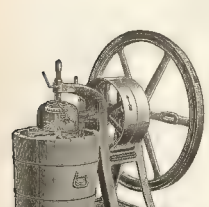
No. 27 —For Military Models, 38 Caliber; Wt. per Pair 3 ozs..... 11.50

No. 28 —For Military Model, 45 Caliber; Weight per Pair 3 ozs.. .... 12.50

One Pair in an Envelope

MACHINE ICE CREAM FREEZERS

For Power or Hand Use



IMPROVED PHILADELPHIA

With Tight and Loose Pulleys, Each 18x4 inches; and 42 inch Fly Wheel Weighing 175 lbs. Should Run About 150 Revolutions per Minute to Give Can About 100 Revolutions.

Height of Driving Shaft Above Floor 33½ inches; Base Plate 38x24½ inches.

The Can and Dasher Both Revolve and in Opposite Directions.

The Can is Made of 18 Gauge Steel, Riveted-in Seam with Heavy Malleable Iron Bottom and Heavily Coated with Pure Block Tin. The Top of Can is Reinforced with Heavy Steel Band.

The Dasher is Malleable Iron, Heavily Coated with Pure Block Tin; with Two Rolled Steel Side Scrapers and One Bottom Scraper.

The Tub is Made of 1¾ inch White Cedar, with Staves Tongued and Grooved and Bound with Electrically Welded, Galvanized Steel Wire Hoops.

40 Quart Only

Each

No. 4012T—With Pulleys and Fly Wheel; Weight 640 lbs. **$144.00**

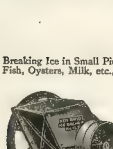
Loose

NOTE.—Machine Freezers with Copper Cans Furnished when Specified, at an Advance in Price of $20.00 Each

✣ICE BREAKERS

For Power or Hand Use

For Breaking Ice in Small Pieces, for Use in Freezing Ice Cream and Sherbets for Ice Cream Parlors, Confectioners, Hotels and Restaurants, and for Packing Fish, Oysters, Milk, etc., or where Broken Ice is Required in Quantity.



No. 12

Shaving Breaker Taken Apart for Easy and Quick Removal of Cylinder

No. 15

✣NEW RAPID

Flanged and Ribbed Cast Iron Frame Plates, Held Securely Together by Strong Bolts, Extending Across the Width of Machine, and Held Tight by Lock Nuts. The Side Frames are Closed Tight at the Bearings, Preventing Ice Passing Through Into the Pulleys, an Important Feature not Found in Other Breakers. The Lower Plate in All Except No. 12 is Fitted Into Slides and can be Used Either at Front or Back of Machine as Desired. The Upper Back Plate in all Except No. 12 is Made to Adjust Toward or Away from the Cylinder, in Order to Break the Ice Finer or Coarser with the Plate in Use.

The Cylinders are Heavy and Strongly Braced, Clamped and Keyed to the Steel Driving Shaft, which is Supported in Bearings of Ample Size and Well Babbitted.

The Picks are Best Grade Drop Forged Steel, Made Round and Tapered at Shank to Fit Taper Hole in Cylinder, and will Interchange without Machining or Filing. They are Readily Removable from Socket by Tapping on Back End, yet are Driven Tightly into Socket During the Breaking of Ice, and will not Loosen and Fall Out.

Two Combs, One Fine and One Coarse, are Furnished with Each Machine. Should Run 150 Revolutions per Minute. Fly Wheel with Handle, Tight and Loose Pulley, Furnished with Each Machine.

Nos.	12	15	21	23
Capacity per Hour, Tons	2½	4	6	12
Size of Opening, Inches	12x10	15x14	21x14	23x14
Size of Each Pulley, Inches	12x2½	14x3½	14x3½	14x3½
Diameter of Fly Wheel, Inches	24	30	30	30
Height of Frame, Inches	35½	34	34	34
Size of Base, Inches	16½x18½	21x23	27x23	36x23
Weight, Each, Lbs.	375	645	760	1200
Each	$100.00	154.00	185.00	275.00

Loose

✣ **Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory**

POCKET MATCH SAFES

Per Dozen

No. 510—Drawn Brass; Dull Nickel Finish; Stamped Angling Design; Steel Inside Spring with Brass Press Button; Size 2⅛x1¼ inches; Weight per Dozen ⅝ lb..... $1.60

Per Dozen

No. 3—Drawn Brass; Nickel Plated and Polished; Stamped Elephant Design; Steel Inside Spring with Brass Press Button; Size 2⅛x1¼ inches; Weight per Dozen ⅝ lb. $2.00

Per Dozen

No. 87—Heavy Drawn Brass; Nickel Plated and Polished; Plain Sides; Steel Inside Spring with Brass Press Button; Size 2¾x1¼ inches; Weight per Dozen ¾ lb..... $2.50

Per Dozen

No. 280—Stamped Brass; Lapped and Soldered Joints; Dull Nickel Finish; Fancy Raised Stamped Head and Floral Design; Steel Inside Spring; Size 2⅞x1¼ inches; Weight per Dozen 1 lb... $3.80

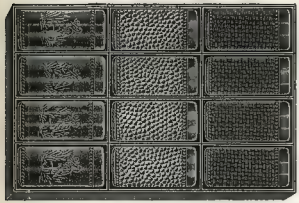
Per Dozen

No. 398—Miners'; Absolutely Waterproof; Drawn Brass; Nickel Plated and Polished; Cap Fits Body Very Snugly and Keeps Matches Perfectly Dry; Size 2⅝x⅞ inches; Weight per Dozen ½ lb..... $3.20

One Dozen in a Box

Per Dozen

No. 7—Rolled Steel Case, Bright Finish; Nickel Plated Brass Caps to Open at Each End; Brass, Oxidised Silver Finish Panels with Raised Stamped Art Designs; Size 2¾x1¼ inches; Weight per Dozen 1¼ lbs..... $5.00



Per Dozen

No. 27—Stamped Brass; Lapped Joints; Steel Inside Spring; Size 2⅛x⅝ inches; Assorted Patterns, One Dozen in a Box; Four Hammered Brass, Four Fancy Figured Brass, Nickel Plated, and Four Fancy Frosted Brass Floral Design; Weight per Dozen ¾ lb..... $3.20

Per Dozen

No. SE—Assorted Society Emblems. Masons, Odd Fellows, Elks, Woodmen; Rolled Steel Cases, Bright Finish; Nickel Plated Brass Caps; Brass Oxidized Silver Finish Panels with Raised Stamped Emblems; Size 2¾x1⅛ inches; Weight per Dozen 1¾ lbs..... $6.00

One Dozen in a Box

AD-UNITS

Order by Number

A RICE BOILER AND TEA KETTLE COMBINED

The first picture shows what is called the insert or steamer. The second shows the kettle as a kettle. The third shows the steamer set into the kettle with the kettle top used as a cover for the steamer.

With so much steam surface the food is cooked more quickly than in the ordinary rice boiler. This makes an economical outfit that everyone needs. Cook your rice, cereals, etc., while heating the dish water.

We also carry a complete line of this Enameled Ware.

No. A411

SAVE MOTHER!

She is entitled to the very best labor-saving devices known Don't you think so? The Quick-Easy Washing Machine will not only save her strength, but will save the clothes, make them wear longer and look better. It is guaranteed to give satisfaction.

The Quick-Easy Washer has a combination high and low speed gearing, is simply constructed on scientific principles and operates without friction or noise. Will not injure the most delicate fabric.

Come and examine this Washer. You will not be disappointed.

No. A412

STREET CAR CARDS

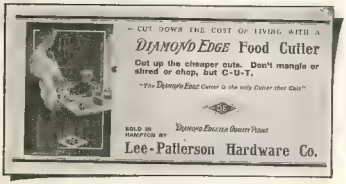
We have a number of very Attractive Cards for Street Cars. These are the exact size necessary and the Merchants name is printed in large type with the result that the card seems to have been made for his special use.

DIAMOND EDGE Kitchen Knives
Have big handles with four flat sides. The hand never cramps—the knife never turns. The blade is a pocket-knife blade.
DE
DIAMOND EDGE IS A QUALITY PLEDGE
SOLD IN HAMPTON BY
Lee-Patterson Hardware Co.

Car Card No. 1

DIAMOND EDGE DOLLAR SAFETY RAZOR
$1.00
HOT OR COLD—IT SHAVES AND SATISFIES
$1.00
NON-RUSTING, GERMAN SILVER RAZOR WITH SEVEN (seven) BLADES
SOLD IN HAMPTON BY
LEE-PATTERSON HARDWARE CO.
DIAMOND EDGE IS A QUALITY PLEDGE

Car Card No. 3


— CUT DOWN THE COST OF LIVING WITH A
DIAMOND EDGE Food Cutter
Cut up the cheaper cuts. Don't mangle or shred or chop, but C-U-T.
"The Diamond Edge Cutter is the only Cutter that Cuts"
DE
SOLD IN HAMPTON BY
DIAMOND EDGE IS A QUALITY PLEDGE
Lee-Patterson Hardware Co.

Car Card No. 2

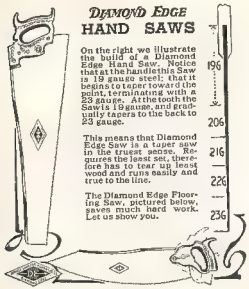
Car Card No. 4

"DIAMOND EDGE IS A QUALITY PLEDGE"

AD-UNITS

Order by Number

DIAMOND EDGE HAND SAWS



On the right we illustrate the build of a Diamond Edge Hand Saw. Notice that at the handle this Saw is 19 gauge steel; that it begins to taper toward the point, terminating with a 23 gauge. At the teeth the Saw is 19 gauge, and gradually tapers to the back to 23 gauge.

This means that Diamond Edge Saw is a taper saw in the truest sense. Requires the least set, therefore has to tear up least wood and runs easily and true to the line.

The Diamond Edge Flooring Saw, pictured below, saves much hard work. Let us show you.

No. A325

HE'S HAPPY

WHY NOT?

The good old American game of Base Ball is the best medicine ever invented for boys. It makes men out of runts. It gives them the strenuous exercise that develops every muscle; that makes them quick and active; that affords them real sport.

We want to encourage this great game, and we know that good Base Ball supplies are appreciated by the youngest boy on the street.

We have provided all classes and kinds of Base Ball goods, and especially do we want you to investigate the merit of our Diamond line, from score books to the finest balls ever made.

We offer a complete line under the Diamond brand, which guarantees the best that can be made.

No. A326

PLAY BALL.

Last year you resolved to buy good Base Ball supplies next year. To get a good glove while you were getting one, or a good mask, or protector, or mitt. You found the cheaper kind expensive.

We simply want to remind you of this. We want you to come and see our line of Diamond Base Ball supplies. These are not made to sell cheap. They are made to satisfy the man who can play ball. They enable you to do your best. They make you more confident.

No matter what you need in this line, we want to talk to you.

No. A295

THISTLE WARE

The soft exquisite Thistle bloom blend is found only in Thistle Enameled Ware gives a rich pottery effect, making it attractive and appealing to those who appreciate cleanliness in their kitchen.

A very suitable article for a wedding present.

It is original in design and superior in finish to the majority of Enameled Wares on the market.

You will make no mistake by selecting Thistle Enamel Ware for your kitchen.

No. A410

Bluebelle Enameled Ware

is new—just now on the market—the latest achievement, the final product of skill and experimentation

It's the last word in Enameled Ware making and the best one.

Blue and White? Yes, all white inside, the exterior being a dainty blend of blues. It's nothing like the old time pided ware you've grown so weary of. It's altogether different.

No. A327

Blue Diamond Enameled Ware

Made in the United States

Original in Design.

Superior in Trimmings.

Unsurpassed in Quality.

Moderate in Price.

Triple Coated

Mottled Blue and White Outside — White Inside.

No. A328

WAGONS AND COASTERS

WABASH FARM WAGON, EXTRA LARGE, EXTRA HEAVY

The Wabash No. 41 Farm Wagon is Designed to Serve Men as well as Boys for use about the Yard, on the Lawn, in the Shop or for a Delivery Wagon for Stores, Newspaper Offices, Ice Cream Factories, etc. The Wide Tires (1¼ inches) make it Especially Suitable for use on Lawns. The Box is finished: Outside in Green, Striped and Decorated; Inside Red; the Running Gear in Bright Vermillion.

Body—Hardwood, Strongly put together; Full Rodded.
Gear—Hardwood, Extra Heavy, Fully Ironed; Large Malleable Fifth Wheel and Steel Braces.
Axles—⅝ inch Steel.
Wheels—Wabash Patent, Extra Heavy, Steel, Rims 1¾ inches on the Tread. Front 11 inches, Rear 15 inches.
Size—Box 38 x 40 inches; 6½ inches Deep, which can be Increased to 11½ inches by adding Side Boards.

Each
No. 41—Weight each 55 lbs. $17 00
One in a Crate

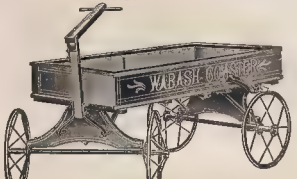
No. 41S—Seats, Weight 5 lbs. . .	Extra $1 20
No. 41SH—Shafts, Weight 5 lbs. . .	Extra 1 20
No. 41SP—Pole, Weight 6 lbs. . .	Extra 1 20
No. 41SE—Side Boards with End Gate, 5 inches High, Weight 6 lbs. . .	Extra 1 20

Body—White Ash Bottom with Removable Express Box.
Gear—Steel; Channel Steel Arch Construction.
Axles—Round Steel ½ inch.
Wheels—Steel Rims and Tires with Iron Hubs and 9-16 inch Hard Maple Spokes.

A Coaster Wagon with Perfect Steering Mechanism, which Operates Equally Well with Express Box on or off. Equipped with Hand Brake. Large and Strong Malleable Fifth Wheel. Hard Maple Pole. Attractively finished.

OVERLAND COASTER WAGON

Per Dozen
No. H1A—Size of Body, 14¼ x 36 inches; Wheels 8 inches; Weight each 27 lbs. . . . $72 00
No. H2A—Size of Body, 14¼ x 36 inches; Wheels 11 inches; Weight each 33 lbs. . . . 88 00
No. H3A—Size of Body, 16¼ x 40 inches; Wheels 11 inches; Weight each 35 lbs. . . . 96 00
Sixth Dozen in a Crate



Body—Selected Wood, Highly finished.
Gear—Made of Hard Wood and Well Braced.
Wheels—T Shape Steel Rims with Flat Steel Spokes.
Axles—Round Steel ½ inch
Size—18 x 34 x 6 inches Deep Outside.
Finish—Box in Natural Color. Gear and Wheels in Bright Vermilion.

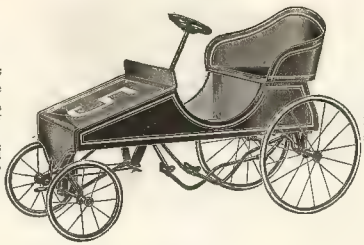
The Wabash Coasters are Strong and Well Made of Selected Materials and are Beautifully Finished. Designed for a Coaster, it will Serve as well for Carrying such Loads as a Sack of Grain, a Bushel of Coal or a Cake of Ice. Fitted with Hand Brake.

WABASH COASTER WAGON

Each
No. 37—Weight 25 lbs. $7 20
Two in a Crate

AUTOMOBILES

Body—Sheet Steel, 15x36 inches; Wood Bottom.
Hood—Galvanized Iron, Cadillac Design.
Wheels—Steel with Rubber Tires ½ inch; Front 10 inches; Rear 16 inches.
Gear—Wrought Steel.
Finish—Body, Inside, Green; Outside, Vermilion; Striped Yellow and White; Gear, Black; Wheels Green.



The Seat of this Automobile is Hinged, Forming a Package Compartment Underneath. It is Equipped with a Ratchet Sparking Crank and a License Tag.

Wheel Steering Device

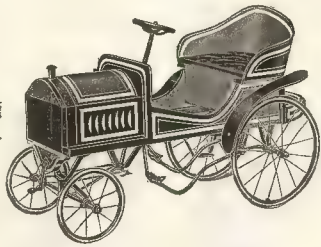
★RED DEVIL

	Each
No. RD5—Length 42 inches; Width 21 inches; Height 26 inches; Weight 40 lbs.	**$12.00**

One in a Crate

Body—Wood with Sheet Steel.
Hood—Sheet Steel
Wheels—Steel with Rubber Tires ¾ inch; Front 10 inches, Rear 16 inches.
Gear—Wrought Steel; 7-16 inch Axles.
Seat—Upholstered in Morocco line.

Wheel Steering Device



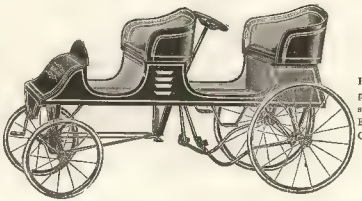
Finish—The Hood and Seat are Painted Auto Red with Dark Green Striping. The Sheet Steel Fender is Enameled Black. The Wheels are Enameled Green and the Gearing is Finished in Black Enamel. Equipped with a Ratchet Sparking Crank and a License Tag.

	Each
No. 999—Length 46 inches; Width 21 inches; Height 26 inches; Weight Each 60 lbs.	**$18.00**

One in a Crate

Body—Sheet Steel, 14½x46 inches.
Hood—Steel Formed; same Design as Regular Automobiles.
Wheels—Steel with Rubber Tires ½ inch; Front 12 inches; Rear 18 inches.
Finish—Body, Inside, Green; Outside, Dark Red with White and Yellow Striping; Wheels Green

Wheel Steering Device



The Seat of this Automobile is Hinged, Forming a Package Compartment Underneath; Upholstered in Fabrikoid Leather; it is Equipped with a Ratchet Sparking Crank and a License Tag.

TWO PASSENGER TOURING CAR

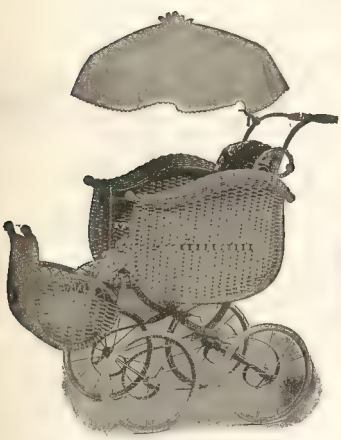
	Each
No. 8—Length 49 inches; Width 21 inches; Height 26 inches; Weight 55 lbs.	**$18.00**

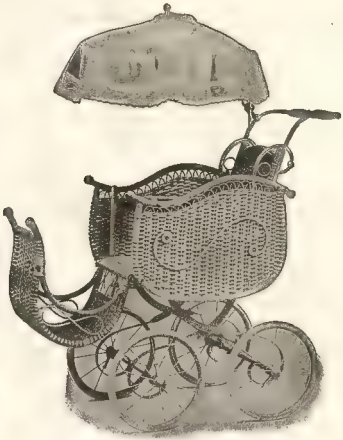
One in a Crate

GO-CARTS

★DIAMOND BRAND

Large Size Folding





★MOTHER GOOSE

Body—Varnished Reed Work, Highly Finished, Natural Color; Adjustable Back and Dash; Ornamental Sides with Large Roll Edge; Seat Especially Closely Woven.

Gear—All Steel; Solid Steel Pusher with Sectional Wood Cross Handle, Enameled White with Nickel Plated Ferrule in Center; Front and Rear Springs; Patented Foot Brake; Independent Back and Dash Fixtures; Finish of Gearing, Green Enamel.

Wheels—12 inch, Enameled Green; **⅝ inch Rubber Tires**; Patented Anti-Friction Wheel Fasteners; Rubber Hub Caps.

Strap—Embossed Russet Oak Leather.

Upholstering—Rep; Cord Fasteners, Furnished in Green, Brown, Blue or Drab.

Parasol—Brussels Net; One Deep Ruffle and Rosette; Double Lining, White and Green Silesia.

Seat—Padded; Rep Upholstered; Width 11¾ inches, Depth 12½ inches.

	Each
No. 1001P—Complete with Parasol	**$23 00**
No. 1001 —Without Parasol	**19 50**

Weight Each 55 lbs.

★SUNNY JIM

Body—Varnished Reed Work, Highly Finished, Natural Color; Adjustable Back and Dash; Ornamented Sides with Closely Wound Arm Rest; Seat Especially Close Woven Reed.

Gear—All Steel; Including Pusher with Sectional Wood Cross Handle, Enameled White, with Nickel Plated Ferrule in Center; Front and Rear Springs; Patented Foot Brake; Independent Back and Dash Fixtures; Finish of Gearing, Green Enamel.

Wheels—12 inch, Enameled Green; **⅝ inch Rubber Tires**; Patented Wheel Fasteners; Rubber Hub Caps.

Strap—Embossed Russet Oak Leather.

Upholstering—None.

Parasol—Brussels Net; One Deep Ruffle and Rosette; Double Lining, White and Green Silesia.

Seat—Width 11¾ inches, Depth 12½ inches.

	Each
No. 1000P—Complete with Parasol	**$19.50**
No. 1000 —Without Parasol	**15.50**

Weight Each 55 lbs.

One in a Crate

VELOCI-BI

Something New and Up-to-Date

Miles Ahead of the Old Style Velocipede

Easier to Ride and More Exciting

Fills the Demand for Cheap Juvenile Bicycles

Steel Frame, Enameled Black, Decorated with Gold Stripes

Adjustable Spring

Bicycle Pattern Saddle

Forged Steel Axles

Anti-Friction Bearings

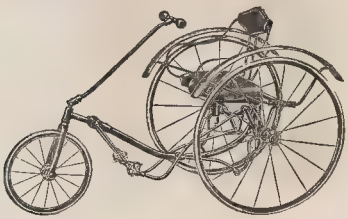
Steel Wheels Tinned

Solid Rubber Tires ⅞ inch

	Each
No. V16—16 inch Wheels; Leg Measure 19 inches; Weight Each 19 lbs.	$ 7.20
No. V20—20 inch Wheels; Leg Measure 21 inches; Weight Each 26 lbs.	9.00
No. V24—24 inch Wheels; Leg Measure 22 inches; Weight Each 31 lbs.	10 00

One in a Crate

TRICYCLES



★RUGBY

Ball Bearing; High Grade

Best of Material Throughout; Finished in Rich, Black Bicycle Enamel; Nickel Plated Arm Rest and Steering Handle; **Mud Guard or Fender** Finished in the Natural Color of the Wood; ⅞ **inch Solid Rubber Tires**; Full **Ball Bearing** in Front Wheel, and Frame Bracket; Upholstered best Quality Imitation Leather; Seats are Fitted with Comfortable Easy Riding Springs.

	Each
No. 118—18 inch Rear Wheels; Weight 25 lbs.	$15 50
No. 120—20 inch Rear Wheels; Weight 36 lbs.	19.00
No. 122—22 inch Rear Wheels; Weight 43 lbs.	22.00

Three in a Crate

★DIAMOND

Black Enameled Tubular Steel Frame; Decorated with Gold Stripes; Adjustable Spring Seat, Upholstered in Plush; Forged Steel Axle; Steel Wheels, Tinned.

With Steel Tires

	Each
No. 00—18 inch Rear Wheels; Weight 17 lbs.	$ 6 80
No. 0—20 inch Rear Wheels; Weight 19 lbs.	8 50
No. 1—22 inch Rear Wheels; Weight 22 lbs	10.00

With Rubber Tires

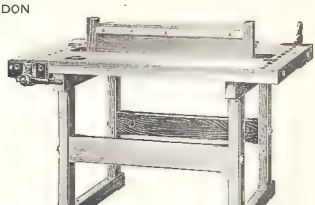
	Each
No. 3½—18 inch Rear Wheels; Weight 18 lbs	$10 00
No. 4—20 inch Rear Wheels; Weight 19 lbs.	12 50
No. 5—22 inch Rear Wheels; Weight 25 lbs.	17 50
No. 6—28 inch Rear Wheels; Weight 33 lbs.	20.00

Three in a Crate

"DIAMOND EDGE IS A QUALITY PLEDGE"

✣MANUAL TRAINING BENCHES

SHELDON



Made of Kiln Dried, Selected Clear Maple; Every Piece Thoroughly Sanded Smooth on All Sides and Oil Finished; the Top is Made of Strips 1¾ inches Wide and 2¼ inches Thick; the Girths are Full 5 inches Wide, Unusually Heavy and Bolted to the Stands with 6 inch Machine Bolts; The Drawer Ends and Sides are ⅝ inch Thick, Bottom Full ¾ inch; For Detail of Construction, See Page 292.

✣ OMAHA MODEL

Height 32 inches; Top 52x22x2¼ inches; Tool Recess 7 inches Wide, Tool Rack 30 inches Long; Drawer 38x10x6 inches, with Bronze Drawer Pulls, Fitted with Two No. 3 Rapid Transit Vises, with 3x7½ inch Jaws, Opening 8½ inches, and No. 13 Bench Stop and Steel Dogs as Shown in Cut

	Each
No. OMD—With Drawers; Weight 175 lbs.	**$27 50**
No. OM —Without Drawers; Weight 155 lbs.	**25 00**

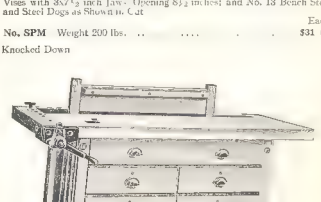
✣ ST. PAUL MODEL

With Paneled Tool Rack on Top of Bench

Height 32 inches; Top 52x38x2¼ inches; Tool Recess 7 inches Wide; Two Frame Uprights 6 inches Long, 8 inches High, with 30 inch Rack on Each Side, Fitted with Two No. 3 Rapid Transit Vises with 3x7½ inch Jaws, Opening 8½ inches; and No. 13 Bench Stop and Steel Dogs as Shown in Cut

	Each
No. SPM Weight 200 lbs.	**$31 00**

One in a Crate; Knocked Down



Made of Kiln Dried, Selected Clear Maple; Every Piece Thoroughly Sanded Smooth on all Sides and Oil Finished; the Top is Made of Strips 1¾ inches Wide and 2¼ inches Thick, the Girths are Full 5 inches Wide, Unusually Heavy and Bolted to the Stands with 6 inch Machine Bolts; The Drawer Ends and Sides are ⅝ inch Thick, Bottom Full ¾ inch; For Detail of Construction, See Page 292.

✣ ELGIN MODEL

With Three Lockers and One Tool Cupboard

Height 32 inches (Unless Otherwise Specified); Top 52x22x2¼ inches, Tool Recess 7 inches Wide, Tool Rack 30 inches Long, Lockers, Each 18½ inches Front, 17 inches Deep and 5 inches High with Yale Tubular Locks and Bronze Pulls; Tool Cupboard 13 inches Across Front, 17 inches Deep, 18 inches High, Fitted with One No. 3 Rapid Transit Vise with 3x7½ inch Jaws, Opening 8½ inches, and No. 13 Bench Stop and Steel Dogs as Shown in Cut

	Each
No. EM—Weight 175 lbs	**$30 00**

✣ MINNEAPOLIS MODEL

With One Large Drawer, Six Locker Drawers and Paneled Tool Rack

Height 32 inches (Unless Otherwise Specified); Top 52x22x2¼ inches, Tool Recess 7 inches Wide; Tool Frame Uprights 6 inches Long, 7 inches High with 30 inch Tool Rack; Large Drawer 38x20x6½ inches, Lockers 16½x20x5 inches, with Yale Tubular Locks and Bronze Pulls; Legs 3 inches square, Rails 3½ inches Wide

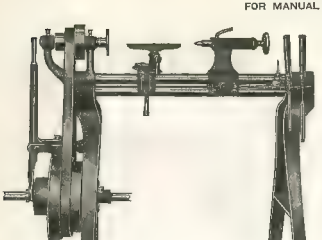
Fitted with One No. 3 Rapid Transit Vise with 3x7½ inch Jaws, Opening 8½ inches; and No. 13 Bench Stop and Steel Dogs as Shown in Cut.

	Each
No. MM—Weight 275 lbs.	**$47 50**

One in a Crate; Knocked Down

Items marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory F. O. B Chicago, Ill. N. F. A.

✣LATHES
SHELDON—WOOD TURNING
FOR MANUAL TRAINING SCHOOLS

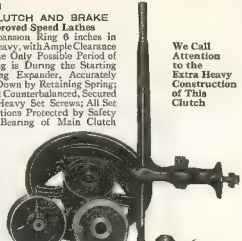


IMPROVED CLUTCH AND BRAKE
Used on Improved Speed Lathes

Features—Expansion Ring 6 inches in Diameter, Extra Heavy, with Ample Clearance when Released; the Only Possible Period of Wear on this Ring is During the Starting Period; Steel Ring Expander, Accurately Milled, and Held Down by Retaining Spring; Clutch Ring Wheel Counterbalanced, Secured to Shaft by Two Heavy Set Screws; All Set Screws and Projections Protected by Safety Flange Covering; Bearing of Main Clutch Wheel 6 inches Long, Provided with Oil or Grease Cup, as Desired; Clutch Lever Bracket Extra Broad Base, and Heavy Cap Screw Locked in Position by a Steel Ratchet, Affording Ample Adjustment and Eliminating any Possibility of its Working Down and Wearing on the Expanding Cone, or Becoming Loosened by Excessive Strains on the Brake.

This Combination Further Eliminates Any Possibility or Cause for Wear on the Expanding Cones; Brake Shoe is Metal with Leather Facing.

We Call Attention to the Extra Heavy Construction of This Clutch



✣IMPROVED PATENT SPEED LATHES
With Improved Clutch and Brake, Shaft and Belt

Polished Steel Bed Bars, Welded into Heavy Cast Iron Frame, with Angle Legs; Improved Clutch and Brake (as Described Above), with Shaft and 1¼ inch Belt Face Plate with Screw Center; Tail Stock Accurately Reamed and Milled from Solid Metal; Movable Tool Rack for 10 Tools and Oil Can; Spur Centers and Face Plate; Polished Tool Rest; Saddle and Tool Rest are Machined on All Bearing Surfaces and Slide Easily and Accurately; Steel Saddle Clamping Block, with Lock Nut Adjustment; Small Cone Turned Inside and Out, and Polished Steel Spindle with 1 inch Bearings; No. 2 Morse Taper Cup and Spur Center; 7-16 inch Rod Through Spindle, with Rod to Drive Out Spur Centers; Adjustable Boxes, Babbitted with Special Frictionless Hard Babbitt Metal.

The Equipment of the Lathe Eliminates the Old Annoyances of Belt Shifting, Belt Slipping, Overhead Oiling, Overhead Jar and Vibration, Overhead Noise and Overhead Dirt and the Obstruction of Light and View of the Shop.

Schools Which Have Attempted to Run Shafting and Belting Beneath the Floor of a Classroom Have Almost Invariably Found it Impracticable and Made the Classroom Untenantable.

Each

No. 1 Takes Material 26 inches Long 11 inches Diameter; Speed of Shaft 400 Revolutions per Minute; Height Over All 44 inches; Length Over All 50 inches; Width at Floor 22 inches; Weight 340 lbs. ..... $ 88.00

No. 3—Takes Material 36 inches Long, 11 inches Diameter; Speed of Shaft 400 Revolutions per Minute; Height Over All 44 inches; Length Over All 60 inches; Width at Floor 22 inches; Weight 370 lbs 101 00

These Lathes Correspond in Size and Construction with Our Nos. 1 and 3 Lathes, Described Above.

For Speed, Lathe Efficiency, Appearance and Convenience, We Urge Comparison with Lathes of any Cost.

✣BENCH LATHES
With Countershaft (Described Below)
Speed 600 Revolutions per Minute

Each

No. 1A—Takes Material 26 inches Long, 11 inches Diameter; Height Over All 16 inches; Length Over All 47 inches; Width 7 inches; Weight of Lathe 140 lbs.; Weight Complete with Countershaft, for Shipment 195 lbs. $73.00

No. 3A—Takes Material 36 inches Long, 11 inches Diameter; Height Over All 16 inches; Length Over All 57 inches; Width 7 inches; Weight of Lathe 155 lbs.; Weight Complete with Countershaft, for Shipment 200 lbs.. ..... 79 00

✣FOOT POWER SPEED LATHES

Construction Is Same as No. 1 Shown Above, Except in Having Foot Power Attachment and 1¼ inch Belt.

The Pedal Attachment is Fastened to the Lathe Base, not to the Floor, Making the Machine at all Times Portable.

Speed Ranging from 500 to 2,000 Revolutions per Minute May be Maintained with Ease and Uniformity. Either Pedal May be Instantly Detached or will Detach Itself if it Strikes an Obstruction; the Heavy Balance Wheel and Range of Speeds Make the Machine Suitable for a Wide Range of Work, on Either Wood or Metal.

Each

No. 2—Complete; Takes 26x11 inch Material; Weight Complete 300 lbs..... ..... $73.00

One in a Case

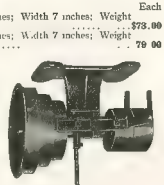
✣COUNTER SHAFTS
For Sheldon Lathes

To be Used Where this Method of Driving the Lathes is Desired.

The Shifter May be Adjusted for Either Straight or Crossed Belt Operated by Means of a Rod and Handle Hanging Convenient to the Lathe.

With Tight and Loose Pulleys; the Loose Pulley is Fitted with Bronze Self-oiling Bearings.

Handle, but no Rod, is Furnished for Shifter.



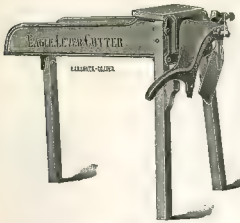
Each

No. 1C—Base Plate 8x11 inches; Length Over All 15 inches; Pulleys Each 2½x8 inches; Cone Wheels 1⅝x7, 3½ and 10 inches; Speed 600 Revolutions per Minute; Weight 40 lbs. $19 00

One in a Case

Items Marked ✣ not Carried in Stock; can only be Furnished by Shipping Direct from Factory.

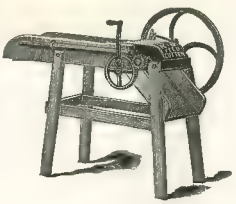
FEED CUTTERS



EAGLE

The Frames are Made of Seasoned, Selected Hardwood, Varnished Well Braced and put Together with Joint Bolts. The Shafts are Cold Rolled Steel, with Babbited Boxes for Bearings. The Knives are Steel Laid, Bolted on Strong Recessed Knife Arms.

The Feeding Device Consists of Two Cast Iron Rollers, the Bottom One Turned Smooth, the Top One has Cone Shaped Projections which Grasp the Feed and Forces it Toward the Knives. By the Means of a Lever on Power Machines, the Feed Rollers can be Stopped or Started in a Moment



HAND

Cuts any Length up to 2¼ inches — Each

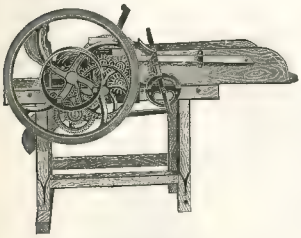
No. L—Lever Hand Cutter, 10½ inch Blade. Weight 45 lbs..... **$7.00**

HAND

Cuts ⅜-½-¾-1-1½ inches — Each

No. KD—Heavy Safety Balance Wheel; 11 inch Spiral Knife; Three Cuts to One Turn of Crank. Weight 150 lbs..... **$22.00**

TWO-HOLE EAR CORN SLICER



TWO-HOLE EAR CORN SLICER

For Slicing up Ear Corn for Feeding Cattle, Milch Cows and Calves. Prepares Ear Corn in Manner Best Suited to the Animal at Less Expense and More Rapidly than any Other Method. Sliced Ear Corn Provides the Needed Amount of Roughness to Promote Digestion and Perfect Assimilation. Machine can be Run by Hand-Power and Cut at the Rate of 40 Bushels per Hour.

Just the Thing for Soft Corn.

HAND OR POWER

Cuts ⅜-¾ and 1½ inches. — Each

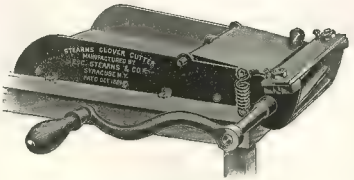
No. 12½—Heavy Safety Balance Wheel; 12 inch Clamp Pulley with 4 inch Face; Two Heavy 11 inch Knives. Weight 275 lbs.... **$50.00**

Each

No. 36—Eagle Corn Slicers. Weight 200 lbs . **$32 00**

CLOVER CUTTER

A person in Five Minutes can Cut Enough with this Machine to Last One Hundred Fowls a Day.



STEARNS — Each

No. 33—Cuts Clover, Cabbage Leaves, Alfalfa, Etc., into Half inch Lengths, Eight Cuts to Each Revolution, Making a Total Cut of Four inches to Each Revolution of the Cylinder. Convenient for Use on Bench or Table. It is Self-Feeding and Sharpening. The Entire Frame is Made of Malleable Iron; Weight 5 pounds Each..... **$7 00**

SPRING BALANCES

STRAIGHT; LIGHT

Black Japanned, Stamped Steel Case; Polished Brass Face; Stamped Figures and Lines; Tinned Steel Hook and Ring.

Nos.	2000	20	30
Capacity, Lbs.	24	25	50
Graduation, Lbs.	½	½	1
Length Case, In	4½	5	5½
Width, In	1¼	1¼	1¾
Length Over All, In.	8	8	10
Weight, Doz., Lbs.	2½	2½	4½
Per Dozen	$1.40	1.50	2.30

Nos. 2000 and 20, One Dozen; No. 30 Half Dozen in a Box

STRAIGHT; HEAVY

Black Japanned, Stamped Steel Case; Polished Brass Face; Stamped Figures and Lines; Tinned Steel Hook and Ring.

Nos.	40	70
Capacity, Lbs.	25	50
Graduation, Lbs.	½	1
Length Case, Inches	6¾	8¼
Width, Inches	1¾	2½
Length Over All, In.	10¾	13
Weight, Dozen, Lbs	4½	9¾
Per Dozen	$4.50	9.00

Half Dozen in a Box

STRAIGHT; EXTRA HEAVY

Black Japanned, Stamped Steel Case; Polished Brass Face; Stamped Figures and Lines; Tinned Steel Hook and Ring.

Nos.	80	90	100
Capacity, Lbs.	80	100	125
Graduation, Lbs	1	1	1
Length Case, In	11	12¾	14¼
Width, In	2¼	3	3½
Length Over All, In.	16	18	20
Weight, Doz., Lbs.	20	43	80
Per Dozen	$26.50	85.00	53.00

No. 80, Quarter Dozen; Balance One Twelfth Dozen in a Box

ROUND; LIGHT

Black Japanned Steel Case; Polished Brass Dial; Stamped Figures and Lines; Tinned Steel Hook and Ring.

Nos.	10	020
Capacity, Lbs.	25	50
Graduation, Lbs	½	½
Length Case, Inches.	5¾	6¾
Diameter Case, In	3¾	1¾
Length Over All, In.	10	15
Weight, Dozen, Lbs	4	12
Per Dozen	$4.40	12.50

No. 10, Half Dozen; No. 020 Quarter Dozen in a Box

ICE BALANCES

STEEL KING

All Steel; Japanned Case; Nickel Plated Rim; the Brass Dial is Long with Very Distinct Markings; the Spring Cannot be Strained beyond its Capacity; Scale is Quickly Adjusted by Removing Cap and Turning Adjusting Screw.

Size of Case 7⅝x8 inches, Length Over All 16½ inches.

Per Dozen

No. 200B—Capacity **200 lbs.** by 2 lbs. **$6.90**

No. 300B—Capacity **300 lbs.** by 5 lbs. **7.30**

Weight Each 5¼ lbs

One in a Box

IRON CLAD

Malleable Iron Case, Black Japanned and Ornamented; Nickel Plated Brass Dial; Markings Stamped in; Tanned Steel Ring and Hook

Size of Case 10½x3 inches; Length Over All 15 inches.

Per Dozen

No. 140—Capacity **200 lbs.** by 2 lbs **$50.00**

No. 150—Capacity **300 lbs.** by 5 lbs. **48.00**

No. 160—Capacity **300 lbs.** by 5 lbs. **58.00**

Weight Each 5¼ lbs.

One in a Box

Japanned Steel Case; Special Drawn Steel Wire Spring, Japanned. Very Compact, with Longer Dial than Ordinary Makes. Polished Brass Face, with Stamped in Figures and Markings.

Nos.	50P	100P	150P
Capacity, Lbs.	50	100	150
Graduation, Lbs.	½	1	1
Length, Case, In.	4¾	6¾	6¾
Width, In.	1¾	1⅝	1⅝
Length Over All, In.	11½	18	18
Wt. Doz., Lbs.	6	21	23
Per Dozen	$11.50	33.00	42.00

No. 50P, Half Dozen; Balance One Third Dozen in a Box

GERMAN CRAB

Polished Spring Steel Frame, Polished Brass Face; Polished Wrought Steel Hooks and Rings; Stamped Figures and Lines.

Per Dozen

No. GC—Capacity 300 Lbs. by 5 lbs.; Size of Frame 3¾x3½ inches, Length Over All 10½ in.; Weight per Doz. 7½ lbs. **$8.00**

One in a Package

Black Japanned Steel Case; Nickel Plated Dial on Each Side of Case, Tempered Steel Spring; Tinned Steel Hook and Ring

Size of Case 9½x2¾ in.; Length Over All 14 inches; Graduated by 5 lbs

Per Dozen

No. 200X5—Capacity **200 lbs** **$48.00**

No. 300X5—Capacity **300 lbs.** . . **55.00**

Weight per Dozen 60 lbs.

One in a Box

MILK AND CREAM

A Loose Pointer, Regulated by a Thumb Screw, may be Set at any Point on the Dial, to Take the Tare of Milk Pails, etc.

Black Enameled Steel Case; Polished Brass Face, Stamped in Figures and Lines; Tinned Steel Hook and Ring

Nos.	260MD	270MD	280MD
Capacity, Lbs	30	60	120
Length Face, Inches.	10½	12	14¾
Width, Inches	4¾	4¾	4¾
Length Over All, In.	15½	17	19
Weight Dozen, Lbs.	28½	33	46
Per Dozen	$50.00	58.00	86.00

One in a Box

SCALES

CIRCULAR SPRING BALANCE

8 inch White Enameled Dial; Figures and Lines Black Enameled; 10 inch Glass Sash; Nickel Plated Sash Frame; Nickel Plated Bow; 13 inch Porcelain Enameled Pan; Height Over All 31 inches; Black Japanned Cast Iron Case.

SINGLE DIAL

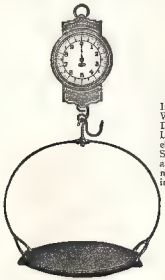
	Each
No. 4266E—Capacity **30 lbs.** by 1 oz.	**$13 00**
No. 4276E—Capacity **60 lbs.** by 2 ozs.	**15.00**

DOUBLE DIAL

Can be Read from Either Side

No. 4266EDD—Capacity **30 lbs.** by 1 oz.	**$20 00**
No. 4276EDD—Capacity **60 lbs.** by 2 ozs.	**22.00**

One in a Wood Box; Weight 15½ lbs. Each

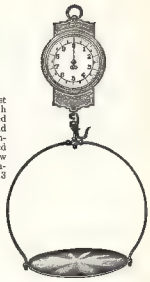


Japanned Cast Iron Case; 7 inch White Enameled Dial; Figures and Lines Black Enameled; Nickel Plated Sash; Tinned Bow and Swivel; Diameter of Pan 13 inches.

WITH WHITE ENAMELED RIMLESS PAN

	Each
No. 5256EH—Capacity **15 lbs.** by ½ oz.; Size of Face 10¼x7 inches; Height Over All 31 inches; Weight Each 12 lbs	**$10.50**
No. 5266EH—Capacity **30 lbs.** by 1 ozs.; Size of Face 11x7 inches; Height Over All 32 inches; Weight Each 12 lbs	**10 50**
No. 5276EH—Capacity **60 lbs.** by 2 ozs.; Size of Face 12x7 inches; Height Over All 33½ inches; Weight Each 12 lbs	**12 00**

One in a Wood Box



WITH TINNED STEEL PAN

	Each
No. 5264—Capacity **30 lbs.** by 1 oz.; Size of Face 10¼x7 inches; Height Over All 30 inches; Weight Each 6 lbs	**$8 00**
No. 5274—Capacity **60 lbs.** by 2 ozs.; Size of Face 12x7 inches; Height Over All 31¼ inches; Weight Each 6 lbs.	**9 00**

One in a Wood Box

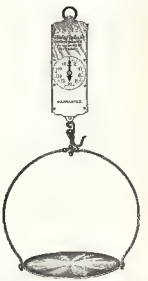
	Each
No. HU8—Capacity **24 lbs.** by 1 oz.; 5¾ inch White Enameled Dial; Figures and Lines Black Enameled; 10 inch White Enameled Pan; Japanned Steel Case; Weight Each 4 lbs	**$3 30**

One in a Box

6 inch Brass Dial; Figures and Marks Stamped in Black; Tinned Bow; 11 inch Porcelain Enameled Pan; Height Over All 20½ inches; Black Japanned Cast Iron Case.

	Each
No. 24E Capacity **24 lbs.** by 1 oz.; Weight Each 4½ lbs	**$4 20**

One in a Box



10½x4¼ inch Brass Face; Figures and Marks Stamped in Black; Tinned Bow and Swivel; 13 inch Round Tinned Pan; Height Over All 30 inches; Black Japanned Cast Iron Case.

	Each
No. 264—Capacity **30 lbs.** by 1 oz.; Weight Each 5¼ lbs.	**$6 00**

One in a Box

LAMPS

MAMMOTH STORE LAMPS

Plain Fount, Lock Ring Harp, Patent Lighting Device (Lamp Can Be Lighted with Chimney On); Wick Indicator Shows Motion of Wick; Oil Indicator Shows Supply in Fount; No. 3 Plumwood Chimney and Wick, or No. 2-0 Belgian or No. 2-0 Liberty Chimney; **Porcelain Dome, 14 Inches in Diameter;** Length from Base to Hanger, 33 Inches; Capacity of Fount, 3 Quarts; Will Burn 14 Hours.

Each

No. 23 —Plain Brass, Complete..... **$8.50**
No. 023—Nickel Plated, Complete... **9.00**

One in a Case. Shipping Weight, 23 Pounds.

EXTRAS FOR REPAIRS Per

Shades, 14-inch Opal; Weight, 36 Pounds dozen Per Dozen..... **$10.20**
Rings, Plain Brass; Weight, 4 Pounds Per Dozen..... **4.20**
Rings, Nickel Plated; Weight, 4 Pounds Per Dozen..... **4.80**

Loose.

Plain Fount, Lock Ring Harp; Patent Lighting Device (Lamp Can Be Lighted with Chimney On); Wick Indicator Shows Motion of Wick; Oil Indicator Shows Supply in Fount; No. 3 Plumwood Chimney and Wick, or No. 2-0 Belgian or No. 2-0 Liberty Chimney; **Tin Shade, 20 Inches in Diameter,** Green Outside, Bright Inside; Length from Base to Hanger, 33 Inches; Capacity of Fount, 3 Quarts; Will Burn 14 Hours.

Each

No. 13 —Plain Brass, Complete **$8.00**
No. 013—Nickel Plated, Complete .. **8.50**

One in a Case. Shipping Weight, 23 Pounds.

Embossed Fount, Lock Ring Harp, Patent Lighting Device (Lamp Can Be Lighted without Removing Chimney); Wick Indicator Shows Motion of Wick, No. 3 Banner or No. 3 Rochester Chimney and No. 3 Circular Wick; **Tin Shade or Reflector, 20 Inches in Diameter,** Green Outside, Bright Inside; Length from Base to Hanger, 33 Inches; Capacity of Fount, 3 Quarts; Will Burn 14 Hours.

Each

No. 3 —Plain Brass, Complete..... **$7.50**
No. 03—Nickel Plated, Complete ... **8.50**

One in a Case. Shipping Weight, 23 Pounds.

STUDENT OR READING

REGULAR

Brass Stand and Tubing, Brass Fount and Fount Receptacle, Nickel-Plated and Highly Polished; with Shut-Off Oil Valve; Capacity One Pint (Cut Shows Reservoir Removed from Receptacle and in Position for Filling); **Dome, 7 Inches** in Diameter; Height of Center Rod, 20½ Inches; Diameter of Base, 6 Inches; Student Chimney, No. 1G; Wick Regulated by Turning the Burner; No. 1 Perfection Circular Wick; Weight, Each, 6¼ Pounds.

Each

No. M1½ —With 7-inch **White Dome**..... **$8.00**
No. MG1½—With 7-inch **Green Dome**..... **8.50**

Loose.

MAMMOTH

Brass Stand and Tubing, Brass Fount and Fount Receptacle, Nickel-Plated and Highly Polished, with Shut-Off Oil Valve; Capacity One Quart; **Dome, 10 Inches** in Diameter; Height of Center Rod, 23½ Inches; Diameter of Base, 6¼ Inches; Student Chimney No. 2IG; Wick Regulated by Turning Burner; No. 21 Perfection Circular Wick; Weight, Each, 7½ Pounds.

Each

No. M2I—With 10-inch **White Dome** **$13.00**
No. MG2I—With 10-inch **Green Dome**..... **14.00**

Loose.

No Additional Charge for Packing.

"DIAMOND EDGE IS A QUALITY PLEDGE"

LAMPS

PARLOR OR RECEPTION ROOM

★ ALADDIN

This Represents the Latest and Most Up-to-date Ideas in Lamp Construction.

The Decorations are Very Elaborate, and Harmonize Perfectly with the Beaded Fringe. It is the Most Popular Lamp on the Market. Complete with Necessary Trimmings and Equipped with the **Success Center Draft Burner**, which Positively Gives More Light Than Any Other Burner, and at the Same Time Uses 50 per cent Less Oil.

★ DE LUXE

This is a Graceful, Dignified Lamp, Especially Designed and Well Adapted for Use in a Parlor or Reception Room.

It is at Once Artistic and Practical Complete with all the Necessary Trimmings and Equipped with the Well-Known **Success Center Draft Burner**, which Positively Furnishes More Light Than Any Other Burner, at the Same Time Using 50 per cent Less Oil.

Each

★**Aladdin**—Height, 25 Inches, Dome or Swell Shade, **12 Inches** in Diameter; Dome and Body of Lamp Hand-Painted with Large Decoration of Chrysanthemums; Red Tint; **Imported Bead Fringe**; Metal Parts Rich Gilt Finish; Complete with 100 Candle Power Success Center Draft Burner, Chimney and Wick..... **$14.50**

One in a Barrel. Shipping Weight, 60 Pounds.

Each

★**De Luxe**—Height, 30½ Inches; Globe, **12 Inches** in Diameter; Globe and Body of Lamp Decorated with Large Cluster of Red and Yellow American Beauty Roses, with Brown Background, Metal Parts Rich Gilt Finish; Complete with 100 Candle-Power Success Center Draft Burner, Chimney and Wick..... **$12.00**

One in a Barrel. Shipping Weight, 60 Pounds.

No Additional Charge for Packing

BICYCLE SADDLES

*RUGBY

Our Rugby Saddles Are Unequalled. They Have Proven Their Durability and Their Popularity to the Satisfaction of Both Dealers and Riders. They Combine the Best of Material Obtainable; Russet Leather Cover; Hair Felt Padding; Wooden Base; Best of Springs of the Various Styles and Clamps.

Each

No. 052RC—Gents; Russet Leather Covered; Hair Felt Padded; High Back Wood Base; Universal Springs Black Enameled; Length of Seat 10¼ inches, Length Over All 10¾ inches; Width 8 inches; Weight 2¾ lbs **$2.50**

Each

No. 041RC—Gents; Russet Leather Covered; Hair Felt Padded; Low Back Wood Base; Universal Springs Highly Nickel Plated, Length of Seat 9¼ inches; Length Over All 9¾ inches; Width 8 inches; Weight 2¼ lbs **$2.00**

Each

No. 52RC—Gents; Russet Leather Covered, Hair Felt Padded; High Back Wood Base; Coil Sprng Highly Nickel Plated; Length 10¾ inches, Width 8 inches; Weight 1½ lbs . **$2.00**

Each

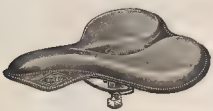
No. 41RC—Gents; Russet Leather Covered, Hair Felt Padded; Low Back Wood Base; Coil Sprng Highly Nickel Plated; Length 9¼ inches, Width 8 inches; Weight 1½ lbs . . . **$1.60**

Each

No. 52R—Gents; Russet Leather Covered; Hair Felt Padded; High Back Wood Base; Truss Spring Nickel Plated; Length 10¾ inches; Width 8 inches; Weight 1¾ lbs. **$1.80**

Each

No. 40R—Gents; Russet Leather Covered; Hair Felt Padded; Low Back Wood Base, Truss Spring Nickel Plated; Length 9¼ inches; Width 8 inches; Weight 1¾ lbs. **$1.50**



Each

No. 21R—Gents; Russet Leather Covered; Padded Wood Base, Truss Spring Nickel Plated; Length 9¼ inches; Width 8¼ inches; Weight 1¾ lbs **$1.80**

Each

No. 10R—Gents; Nickel Plated Truss Spring; Russet Leather Cover; Wood Base; Length 9¼ inches; Width 7½ inches, Weight 1¾ lbs. **$1.20**

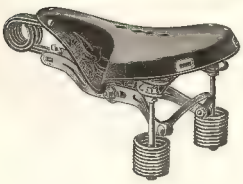
Each

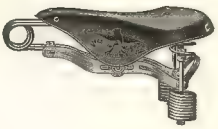
No. 07RC—Ladies; Nickel Plated Coil Spring; Russet Leather Cover; Wood Base; Length 8 inches; Width 8¼ inches; Weight 1¾ lbs. **$1.80**

One in a Box

BICYCLE SADDLES

TROXEL EAGLE BRAND





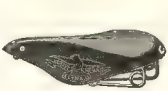
FOR MOTOR CYCLES

Each

Motor—Stamped Steel Frame and Trusses; Cushion Springs Combined with the Universal Spring, all Finished in Black Enamel; English Russet Leather Top, Carefully Selected; The Universal Clamp Used on this Saddle Avoids any Possibility of its Twisting or Turning on the Post; the Design Places the Rider in the Lowest Possible Position on the Motor Cycle; Length of Seat 13½ inches; Length Over All 14¾ inches; Weight 8¾ lbs. **$10.50**

Each

Climax—Suitable for Either Motor Cycles or Bicycles. Stamped Steel Frame and Trusses, Cushion Springs Combined with the Universal Spring, all Finished in Black Enamel; English Russet Leather Top; The Universal Clamp on this Saddle Prevents its Turning or Twisting; It is Especially Suitable for Heavy Riders and Hard Usage on Rough Roads; Length of Seat 12¾ inches; Length Over All 13½ inches; Width 9 inches; Weight 4¾ lbs. **$7.20**



Each

Ideal—Stamped Steel Base; Triple Wire Trusses; New Universal Clamp; Rear Spirals and Double Coil Nose Spring in Front, all Finished in Black Enamel; English Russet Leather Top; Length of Seat 12½ inches; Length Over All 13¾ inches; Width 9¼ inches; Weight 3¼ lbs. **$6.00**

Each

Empire—Stamped Steel Base; Triple Wire Trusses; New Universal Clamp; Rear Spirals and Double Coil Nose Spring in Front, all Finished in Black Enamel; English Russet Leather Top; Length of Seat 10¾ inches; Length Over All 11¾ inches; Width 8¼ inches; Weight 2½ lbs. **$4 00**

Each

Leader—Stamped Steel Base; Steel Wire Truss; New Universal Clamp; Four Single Coil Springs at the Rear, all Finished in Black Enamel; English Russet Leather Top; Length 10¼ inches; Width 8 inches; Weight 2 lbs **$3 50**

Each

Roadster—Stamped Steel Base; Single Wire Truss; Two Rear Spiral Springs and Nose Coil in Front, all Finished in Black Enamel; English Russet Leather Top; Length of Seat 10¾ inches; Length Over All 11¾ inches; Width 7¾ inches; Weight 2 lbs. **$3.00**

Each

Special—Stamped Steel Base; Double Wire Truss; Four Single Coil Springs at the Rear, all Finished in Black Enamel; English Russet Leather Top; Length 10¼ inches; Width 7¼ inches; Weight 22 ozs. **$3 00**

Each

Racer—Stamped Steel Base; Single Steel Wire Truss Spring, Finished in Black Enamel; Standard Clamp, Nickeled; English Russet Leather Top; Length 10¼ inches; Width 7¼ inches; Weight 21 ozs. **$2.50**

One in a Package

"DIAMOND EDGE IS A QUALITY PLEDGE"

✣LIFTING AND LOWERING JACKS

THE JOYCE, CRIDLAND CO.'S GEARED

For Track, Car and Wreckage Work

Heavy Malleable Iron Base, Standard and Lever Socket; Drop Forged Steel; Machine Cut Ratchet Bar and Gear Wheel; High Carbon Rolled Steel Fulcrum Pin and Axle; Hardened Steel Bearings; Selected Hardwood Handles; the Gear Wheel Multiplies the Power Exerted on the Lever; the Raise per Stroke is ¾ inch, Giving Close Adjustment. They are Automatic in Lowering by Perfect, Positive Mechanism.

To Adjust Jack for Raising the Load, Turn the Small Crank in the Frame Near the Lever, Straight Up; for Lowering the Load Turn this Crank Straight Down.

✣No. G185

Track Jack for Heavy Yard Duty. The Lever Works Parallel with the Track, which is Quite an Advantage where Work is Done with Cars Standing on the Adjoining Tracks, or in Cuts.

The Foot Lift Renders it Especially Useful in Track Work.

The Long Narrow Base Adapts it to Being Placed Between the Ties for Track Work

✣No. G184

For Use in Preparatory Wrecking Work, as it is Light and More Convenient to Handle in Clearing Away the Projecting Parts of the Wreckage than the Heavier Hydraulic Jacks.

The Foot Lift Especially Adapts it for this Work and for Track Work.

✣Nos. G193 and G194

For Loaded Freight Car Service. Is Compactly and Powerfully Built. Is Easily Handled and Operated

Provided with Wrought Iron Carrying Handle on Each Side.

Nos.	G183	G184	G193	G194	G196 With Foot Lift
Capacity, Tons	15	15	[illegible]	[illegible]	[illegible]
Height, Down, Inches	25	25	[illegible]	[illegible]	[illegible]
Rise of Bar, Inches	15	15	[illegible]	[illegible]	[illegible]
Rise per Stroke, Inches	¾	¾	[illegible]	[illegible]	[illegible]
Size of Ratchet Bar, Inches	2⅛x2	2⅛x2	[illegible]	[illegible]	2¼x2¼
Weight, Lbs.	132	112	[illegible]	[illegible]	155
Each	$40 00	40 00	50 00	50 00	50 00
	62 00	62 00	77 00	77 00	77 00

✣No. G195

High Lift Jack for Loaded Freight Car Service

For Use where a Taller Jack than No. G194 is Required

No. G195

✣Nos. G199 and G200

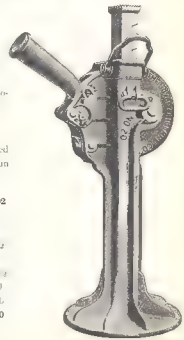
Used for the Heaviest Car Service and for Handling the Heaviest Locomotives, which they do with Ease, Speed and Safety.

✣Nos. G201 and G202

Designed Especially as Palace Car Jacks. A Pair of these Jacks Placed Back of the Trucks will Raise the End, without Blocking, so Trucks can be Run Out without Removing the Steps or Side Bearings.

Nos.	G195	G199	G200	G201	G202
Capacity, Tons	20	30	30	30	[illegible]
Height, Down, Inches	33	33	37	37	41
Rise of Bar, Inches	22½	12	17	[illegible]	[illegible]
Rise per Stroke, Inches	¼	¼	¼	¼	¼
Size of Ratchet Bar, Inches	2⅛x2¼	[illegible]	[illegible]	[illegible]	[illegible]
Weight, Lbs.	165	214	218	270	290
Each	$55 00	75 00	75 00	85 00	85 00
	85 00	115 00	115 00	131 00	131 00

Loose



Nos. G5 Page G202

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

✻HYDRAULIC JACKS

For Prices See Special Price Sheet

THE JOYCE, CRIDLAND CO.'S

All Parts Machined to Exact Gauges

The Base, Head and Cylinder are Made from High Carbon Steel, Carefully Machined and Fitted; the Ram is Forged from Solid Steel, Accurately Fitted and has a Smooth, Even Surface; the Cylinder Packing is a Copper Cup Fitted as Closely as Though Cast Solid, and Never Needs Removing Unless the Cylinder Needs Reboring. The Ram Head is Hard Gun Metal Bronze and Provided with Plunger Barrel; the Suction and Discharge Valves are Made of Hard Rolled Phosphor Bronze and Located in the End of the Ram Head where Ready of Access when in Need of Attention. These Jacks are Carefully Fitted and Every Joint or Connection Stuff and Solid. The Valves and Packing are Accessible without Removing Head of Jack from Ram.

Will Run Out Full Lift in Either a Vertical, Horizontal or Inclined Position

Broad Base

Small Base

With Attached Ground Lift

Nos.	Capacity Tons	Rise Inches	Height Down Inches	Weight Lbs.	Each	Nos.	Capacity Tons	Rise Inches	Height Down Inches	Weight Lbs.	Each	Nos.	Capacity Tons	Rise Inches	Height Down Inches	Weight Lbs.	Each
HB 412	4	12	23	60	$50 00	**HB 406**	4	6	17⅜	43	$38 00	**HG 412**	4	12	23⅜	60	$52 00
HB 418	4	18	29	68	55 00	**HB 412**	4	12	23½	51	42 00	**HG 418**	4	18	29⅜	76	58 00
HB 424	4	24	35	74	61 00	**HB 418**	4	18	29½	59	46 00	**HG 424**	4	24	35⅜	83	63 00
HB 709	7	9	21	69	51 00	**HB 424**	4	24	35½	67	50 00	**HG 712**	7	12	24¾	78	56 00
HB 712	7	12	24	75	56 00	**HB 706**	6	6	18	47	39 00	**HG 718**	7	18	29⅝	85	64 00
HB 718	7	18	29⅝	87	61 00	**HB 709**	7	9	21⅝	61	43 00	**HG 724**	7	24	36¾	113	71 00
HB 724	7	24	36	99	66 00	**HB 712**	7	12	24¾	65	48 00	**HG 1012**	10	12	25⅝	115	63 00
HB 1006	10	6	19½	81	51 00	**HB 716**	7	18	29⅝	75	54 00	**HG 1018**	10	18	31½	153	73 00
HB 1009	10	9	22⅝	89	58 00	**HB 724**	7	24	36¾	87	67 00	**HG 1024**	10	24	37⅝	172	82 00
HB 1012	10	12	25½	97	61 00	**HB 1006**	10	6	19½	72	43 00	**HG 1512**	15	12	28⅞	135	79 00
HB 1018	10	18	31½	112	69 00	**HB 1009**	10	9	22⅝	79	47 00	**HG 1518**	15	18	32⅞	165	94 00
HB 1024	10	24	37½	128	78 00	**HB 1012**	10	12	25⅝	84	50 00	**HG 1524**	15	24	38⅞	192	108.00
HB 1512	15	12	25½	125	76 00	**HB 1018**	10	18	31½	95	58 00	**HG 2012**	20	12	25¾	165	99 00
HB 1518	15	18	32⅝	137	90 00	**HB 1024**	10	24	37⅝	114	65 00	**HG 2018**	20	18	33¾	191	117 00
HB 1524	15	24	38⅝	183	104 00	**HB 1512**	15	12	28⅝	105	62 00	**HG 2024**	20	24	39¾	229	135 00
HB 2012	20	12	25½	139	84 00	**HB 1518**	15	18	32⅝	120	75 00	**HG 3018**	30	18	33¾	281	168 00
HB 2018	20	18	32¾	150	102 00	**HB 1524**	15	24	38⅝	149	87 00	**HG 3024**	30	24	39¾	321	185 00
HB 2024	20	24	38½	181	113 00	**HB 2012**	20	12	25¾	135	79 00	**HG 4018**	40	18	33½	288	186 00
HB 3018	30	18	32¾	230	132 00	**HB 2018**	20	18	33¾	147	94 00	**HG 4024**	40	24	40	344	216 00
HB 3024	30	24	38½	265	178 00	**HB 2024**	20	24	39¾	171	109 00	**HG 5012**	50	12	27¾	265	175 00
HB 4018	40	18	32¾	250	162 00	**HB 3018**	30	18	33¾	215	127 00						
HB 4024	40	24	38½	295	208 00	**HB 3024**	30	24	39¾	253	148 00						
HB 5012	50	12	27¾	214	147 00	**HB 409**	40	9	24½	161	111 00						
HB 5018	50	18	33¾	249	178 00	**HB 4012**	40	12	27¾	180	124 00						
HB 5024	50	24	40	294	208 00	**HB 4018**	40	18	33½	222	148.00						
HB 509	50	9	24	228	148 00	**HB 4024**	40	24	40	272	177 00						
HB 5013	50	12	27	251	161 00	**HB 5012**	50	12	27¾	225	146 00						
HB 5018	50	18	33	264	200 00	**HB 5018**	50	18	33½	277	174 00						

✻OUTSIDE PUMP STYLE

See Description at Top of Page

Valves and Plunger Packing Can be Looked After Without Loosening Pump from Casing. Working Parts are Entirely Protected from Dust, Yet Easily Accessible in Case of Needing Attention. The Double Pump with which the Larger Jacks are Equipped is Most Simple and Practical and the Auxiliary Pump is Thrown into and Out of Gear by Turning the Small Hand Gun Metal Bronze Nut on the Base; Working Both Pumps Under a Light Load or in Working up to a Load Gives Great Speed to the Jack; when the Load is Heavy, Turn the Handle Straight Down, which Throws the Auxiliary Pump Out of Gear and Puts Into Operation Only the High Pressure Pump, when the Pump Attains its Full Capacity.

Special Notice—In Ordering, Prefix to Number the Letter S or D to Indicate Single or Double Pump

Single Pump Without Ground Lift

Nos.	Capacity Tons	Rise Inches	Height Down Inches	Wt. Lbs.	Single Pump Each	Ground Lift Extra	Nos.	Capacity Tons	Rise Inches	Height Down Inches	Wt. Lbs.	Single Pump Each	Double Pump Each	Ground Lift Extra
406	4	6	11	38	$45 00	$ 5 00	**3009**	30	9	14	184	$107 00	$ 32 00	
418	4	12	17	78	62 00	5 00	**3012**	30	12	17	204	114 00	34 00	$22 00
418	4	18	23	90	80 00	5 00	**3018**	30	18	23	241	126 00	150 00	28 00
424	4	24	28½	106	65.00	5 00	**3018**	30	18	28	259	152 00	180 00	33 00
706	7	6	11	74	57 00	6 00	**3024**	30	24	34	294	178 00	208 00	" "
709	7	9	14¾	81	51.00	6 00	**4006**	40	6	14½	200	132 00	47 00	
712	7	12	18⅝	82	54.00	6 00	**4009**	40	9	18⅛	226	132 00	162 00	26 00
718	7	18	26¾	102	61 00	6 00	**4012**	40	12	22½	244	147 00	174 00	30.00
724	7	24	30½	116	66 00	6 00	**4018**	40	18	29⅝	284	178 00	208 00	32 00
1006	10	6	13⅛	78	51 00	6 00	**4018**	40	18	29⅝	324	178 00	208 00	" "
1009	10	9	16¾	88	60 00	6 00	**4024**	40	24	34½	295	161 00	191 00	26 00
1012	10	12	19½	93	61 00	8.00	**4024**	40	24	34½	313	175 00	205 00	27 00
1018	10	18	25⅝	113	69 00	8 00	**5012**	50	12	20¾	323	200 00	230 00	24 00
1024	10	24	30½	121	78 00	12 00	**5018**	50	18	26½	377	183 00	223 00	" "
1506	15	6	13⅛	88	78 00	12 00	**5018**	50	18	26½	394	208 00	238 00	
1509	15	9	16¾	106	61 00	11 00	**5018**	50	18	27½	489	256 00	286 00	
1512	15	12	19½	109	69 00	11 00	**5018**	50	18	19¾	450	213 00	223 00	
1518	15	18	25⅝	123	78 00	12 00	**5018**	50	18	22¾	458	208 00	270 00	35 00
1524	15	24	30½	160	94 00	14 00	**15018**	150	18	29¾	496	272 00	3.2 00	" "
2006	20	6	13⅛	97	77 00	14 00	**15018**	150	18	30	500	344 00	389 00	
2009	20	9	16¾	113	84 00	16 00	**15018**	150	18	30	550	370 00	410 00	
2012	20	12	19½	125	94 00	18 00	**15018**	150	18	30½	730	422 00	462 00	
2018	20	18	25⅝	156	112 00	20 00	**20018**	200	12	29	750	450 00	490 00	
2024	20	24	30½	188	130 00	24 00								

Double Pump Showing Ground Lift Attached

Items Marked ✻ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

AD-UNITS

Order by Number

The Wonder Bicycle

This Bicycle is called WONDER because it is a wonderfully good Bicycle at a wonderfully low price.

Notice that you buy Bicycle only. No extras to pile up the expense, such as mud guards, coaster brakes and other accessories that do not add to the value of a good road machine. It is just plain Bicycle, and one that will give you more satisfaction for the money than any bicycle on the market.

Should you desire the mud guards, coaster brakes, etc., this can be added at a reasonable price.

Throughout this wheel is made in a high-class manner. The ball-bearings, chain, crank hanger, handlebars, saddle—everything is of a class that will please you and satisfy you.

No. A221

Rugby Bicycle

Other bicycles may be higher priced but they are not better. The Rugby is a bicycle that can be depended upon. It is made of quality material in every part, and the parts that come in for unusual strain are made so good that they really become the strong points of the machine.

The Rugby shows its quality in the superior finish and its fine lines. The best of all, the Rugby shows quality after long continued service.

No. A222

Use the Ad-Units. They Cost you Nothing, if a Customer.

RUGBY AUTOBILT TIRE for Clincher Rim Bicycles

Note the construction of this Tire. It is made just like the high-grade automobile tires.

No. 1 shows three layers of woven fabric.
No. 2 shows a layer of rubber.
No. 3 is a breaker strip of fabric that prevents chafing.
No. 4 is pure white rubber surface, with a non-skid tread.

No Tire on the market to-day compares with this from a service standpoint. It stands the wear and tear and outlasts several pairs of ordinary tires.

No. A502

You Don't Pay the Ice Man

For a Jersey refrigerator. Instead you save the price of a common ice box several times over in the size of your ice bill. Besides the Jersey is a quality refrigerator. It is made of oak, real oak, carefully finished with nickel plated trimmings and will ornament any dining room, because of its classy appearance.

Notice the round corners, the panel construction, no projecting moulding, no cracks, no crevices.

The food chamber is as white as snow. The shelves are of heavily tinned wire. The circulation of cold air is after nature's own method and cannot possibly be improved on. The eight-walled method of building this refrigerator and the careful construction assure that you will never pay toll to the ice man.

No. A503

How is Your Fishing Tackle?

Look it over and get ready. You know that the notion comes suddenly and that you do not have time to look around for new tackle.

We take a great deal of pride in our stock of fishing tackle. We would like to show you and invite you to come and inspect this line, and assure you that you will not be expected to buy simply because you look.

No. A383

Shapleigh Special Bicycle

We ask you to come and look at this bicycle. We believe that it is the bicycle you want. It is not a high priced machine, yet is a high grade machine.

The parts that usually give way in a bicycle are especially good in the Shapleigh Special. They are built to stand.

Pay your repair bill in advance and buy this wheel, that is, add to the price of a cheap wheel the average cost of repairs for a season and you will have enough money to buy this high grade wheel.

No. A223

Ad- units Occupy Less Space Than Any Form of Electrotyped Advertising Matter. You Save in Space. You Save in Composition.

AD-UNITS

Order by Number

DON'T SKIMP ON LOCKS AND HINGES.

Plain, solid, strong Locks and Hinges add greatly to the appearance of your house.

When you figure out the cost allow liberally for these things, and you'll never regret it.

It is just such attention to details that will make your home distinctive.

Within five years there has been great advancement in the manufacture of Builders' Hardware, and we have a fine assortment of the best patterns.

May we show you, Mr. Home-Builder?

No. A224

THE OLD SAW GOES

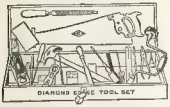
Quality is worth its cost. And this was never truer than with Hand Saws. *DIAMOND EDGE* Hand Saws have all the good qualities. The steel is the finest. The handle is properly placed. They are thin where a good saw should be thin; they are narrow where a good saw should be narrow. They stay sharp and hold their set. They don't need a wide set because they're made right. Consequently they work easily.

DIAMOND EDGE Saws cost only a little more than cheap saws.

No. A226

DIAMOND EDGE

Tool Set



A set of *DIAMOND EDGE* Tools intended for the amateur carpenter.

It is not the number of tools shown, but the quality of them that insures you the best working tools you can possibly procure. The box locks and can be carried under the arm.

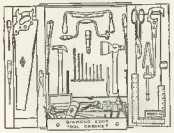
No. A225

THE Mirror Finished Face of a *DIAMOND EDGE* Hatchet is appreciated by skilled workmen. The "hang" and "balance" is a continual delight, enabling them to do better work and do it more easily.

No. A504

DIAMOND EDGE

Tool Cabinets



A set of tools designed to fill the needs of the skilled mechanic, or the man who knows good tools. This is really a tool home and every tool in this home has a place. It is supposed to fasten high up on the wall, out of the reach of the children, and it locks.

This set consists of seventeen of the best grade *DIAMOND EDGE* Tools. In addition to the tools are a number of accessories such as carpenters' pencil, copper wire, screws, nails and brads.

A set that will completely satisfy any man in quality and will prove a continual delight because of their working value.

No. A303

DIAMOND EDGE

GARDEN CULTIVATOR

Garden cultivators are becoming more and more popular because they are built scientifically. Notice the location of the axle in this cultivator. The weight is so centered that one has absolute control. The hanging of this plow is the solution of the hand plow question.

We would say to the man that it is becoming very fashionable to work in the garden and that these cultivators will enable them to cultivate a large garden.

No. A227

BASE BALL UNIFORMS

*DIAMOND BRAND

We Require at Least Ten Days on all Orders

All Made from the Very Best Material Obtainable in their Respective Grades, Especially Woven for Athletic Purposes. The Most Desirable Colors have been Selected, which, Combined with the High Standard of Workmanship, Enables Us to Guarantee Satisfaction; Special Attention Given to Trimmings and Other Details in Designing.

NOTE.—Uniforms Consist of Shirt, Pants, Cap, Belt and Stockings, but No Shoes; Shoes are Not Included in the Price of Uniforms.

Send for Sample Cards of Flannel and Measurement Blank

In Ordering Uniforms Mention Style Shirt Wanted, whether Button or Lace Front; Style Pants Wanted, whether Plain or Padded, Elastic or Tape Bottom; Style Caps; Stockings, Color. When not Otherwise Specified, We will Send Button Front Shirt and Plain Pants with Elastic Bottoms.

AMERICAN LEAGUE

Colors: White, Pearl Gray, Yale Gray, Silver Gray, Black, Maroon, Navy Blue, Brown and Green.
Shirt; Any Style. **Pants;** Any Style. **Belt;** 2½ inch Worsted Strap, Leather Lined, Single Buckle or No. 6 Bridle Leather. **Cap;** Any Style. **Hose;** Heavy Ribbed Worsted; Plain, or 4 inch Fancy Color Band.

Per Uniform

No. 00—Made of Finest Quality All Wool 8 oz. Athletic Flannel, Thoroughly Shrunk; Made to Measure, Full Size and with Sufficient Allowance in all Directions for Freedom of Movement..... **$27 00**
When Ordering Nine or More Uniforms..... **25.00**

Prices Include Name of Club or Monogram, or One 6 inch Old English Letter on Shirt. No Extra Charge for Detachable Sleeves, or One Letter on Sleeve or Monogram on Sleeve Instead of on Shirt.

LEAGUE

Colors: White, Pearl Gray, Yale Gray, Scotch Gray, Brown, Cardinal, Navy Blue, Seal Brown and Green.
Shirt; Any Style. **Pants;** Any Style. **Belt;** 2½ inch Worsted, Leather Reinforced, Singe Harness Buckle or No. 6 Bridle Leather. **Cap;** Any Style. **Hose;** Heavy Ribbed Worsted, Plain or Striped.

Per Uniform

No. 10—Made of Finest All Wool 7 oz. Athletic Flannel, Thoroughly Shrunk, Made to Measure; Full Size and Weight, with Sufficient Allowance for Freedom of Movement..... **$24 00**
When Ordering Nine or More Uniforms..... **21 50**

Price Includes Name of Club, or One 6 inch Plain or Old English Letter on Shirt; or One Letter on Sleeve or Monogram on Sleeve Instead of on Shirt

UNIVERSITY

Colors. White, Pearl Gray, Blue Gray, Yale Gray, Harvard Mixed, Cardinal, Navy Blue, Seal Brown and Green.
Shirt; Any Style. **Pants;** Plain or Lined. **Belt;** 2½ inch Worsted Web, Single Harness Buckle or 1¼ inch Solid Leather. **Cap;** Any Style. **Hose;** Heavy Worsted, Plain Colors or with One 4 inch Stripe on Calf.

Per Uniform

No. 12—Made of 6 oz. All Wool Athletic Flannel; Made to Measure, Full Size and with Sufficient Allowance in all Directions; Guaranteed to Give Best of Service..... **$22 00**
When Ordering Nine or More Uniforms..... **20.00**

Price Includes Name of Club on Shirt, not to Exceed Ten Letters, or One 6 inch Plain or Old English Letter, or Letter or Monogram on Sleeve Instead of on Shirt.

EXTRAS

Letters and Monograms on Sleeves when Furnished in Addition to Name on Shirt, from 20 to 50 cents Each

Each

Felt Letters on Caps..... **$0.20**

PROFESSIONAL

Colors. White, Pearl Gray, Blue Gray, Yale Gray, Harvard Mixed, Cardinal, Navy Blue, Seal Brown and Green.
Shirt; Any Style **Pants;** Plain or Lined. **Belt;** 2½ inch Cotton Web, Single Buckle. **Cap;** Any Style. **Hose;** Heavy Ribbed Worsted, Plain or One Stripe on Calf.

Per Uniform

No. 13—Made of Good Quality 8 oz Athletic Flannel; Made in Same High Grade Manner as Our Best Grades and Guaranteed to Give Satisfaction.. **$17.50**
When Ordering Nine or More Uniforms..... **15.50**

Price Includes Name of Club, not to Exceed Ten Letters, or One 6 inch Plain or Old English Letter on Shirt

EXTRAS

Each

Felt Letters on Caps..... **$0.20**

AMATEUR SPECIAL

Colors: Pearl Gray, Blue Gray, Navy Blue and Maroon
Shirt; Any Style. **Pants;** Plain or Lined and Padded. **Belt;** 2½ inch Cotton Web, Single Buckle. **Cap;** Any Style. **Hose;** Heavy Ribbed Cotton, Plain or 4 inch Fancy Color Band.

Per Uniform

No. 14—Made of Good Quality 5 oz. Athletic Wool Flannel, and Made in the Same High Grade Manner as Our Best Grades, and Guaranteed to Give Good Service and Satisfaction..... **$13.00**
When Ordering Nine or More Uniforms..... **12 00**

Price Includes Name of Club not to Exceed Ten Letters or One Old English Letter

EXTRAS

Each

Piped Seams on Caps..... **$0.20**
Felt Letters on Caps..... **.20**

BASE BALL GOODS

*DIAMOND BRAND

NOTE.—Always Specify Sizes Wanted when Ordering. Sizes Carried in Stock, 5, 6, 7, 8, 9 and 10.

SHOES

LEAGUE

Per Pair

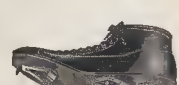
No. 1—League Style and Quality; Hand Made from Best Oil Tanned Russian Calf, Black; Hand Sewed, Genuine Goodyear Welt; Flexible Shank; Fitted with Best Hand Forged Steel Toe and Heel Plates, Ground and Sharpened; Weight per Pair 2¼ lbs..... **$8.80**

PROFESSIONAL

Per Pair

No. 2—Professional Style and Quality; Fine Quality, Genuine Kangaroo Black; Machine Sewed, McKay Welt; Flexible Shank; Fitted with Best Open Hearth Spring Steel Toe and Heel Plates, Ground and Sharpened; Weight per Pair 2¼ lbs..... **$7.50**

One Pair in a Box

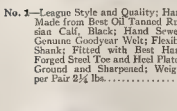


AMATEUR

Per Pair

No. 3—Amateur Style and Quality; Fine Grade Oil Tanned Calf, Black, Machine Sewed, McKay Welt, Flexible Shank; Fitted with Amateur Toe and Heel Plates; Best Steel Ground Points, but not Sharpened; Weight per Pair 2¼ lbs..... **$5 70**

CAPS



St. Louis Style

Chicago Style

Brooklyn Style

Boston Style

Our Line of Base Ball Caps is Unequaled for Quality, Style, Workmanship and Variety. No. 1 Has Flannel Covered **Leather Visors.** Please note carefully before Ordering what Styles and Colors We Furnish in Each Quality, so that there May be no Delay in Filling Order.

Each

No. 1—Made in Any Style; from the Same Flannel Used in League Uniforms. Colors: Black, Yellow, Navy, Steel Gray, Crimson, Yale, Seal Brown, White, Royal Blue, Granite, Scarlet, Pearl, Bottle Green and Maroon **$1 80**

No. 3—Made in Any Style; Colors: Navy, White, Black, Granite, Royal Blue, Yale, Steel Gray, Crimson, Pearl, Maroon, Bottle Green and Scarlet Good Quality, All Wool, 6 Ounce Full Weight Material **1 50**

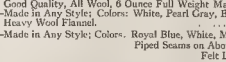
No. 5—Made in Any Style; Colors: White, Pearl Gray, Blue Gray, Yale Gray, Harvard Mixed, Cardinal, Navy Blue, Seal Brown and Green. Heavy Wool Flannel. **1 30**

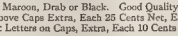
No. 7—Made in Any Style; Colors: Royal Blue, White, Maroon, Drab or Black. Good Quality Flannel. **90**

Piped Seams on Above Caps Extra, Each 25 Cents Net, Except on Nos. 1 and 3

Felt Letters on Caps, Extra, Each 10 Cents Net

BELTS





Each

No. 0—Worsted Web, 2½ inches Wide; Single Harness Buckle; Leather Lined... .. **$1.90**

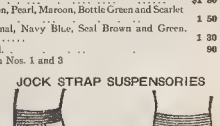
No. 1—Worsted Web; 2½ inches Wide; Single Harness Buckle; No Lining... .. **1.40**

No. 2—Heavy Leather; 1¼ inches Wide; Single Harness Buckle, Nickeled . **80**

No. 3—Cotton Web; 2½ inches Wide; Double Strap and Buckles. . . **70**

No. 4—Cotton Web; 2½ inches Wide; Single Strap and Buckle . . **.40**

JOCK STRAP SUSPENSORIES

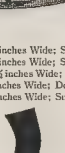


Per Dozen

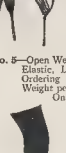
No. 5—Open Weave Cotton Fabric. All Elastic, Light and Cool. When Ordering Give Waist Measure; Weight per Dozen 4 lbs.. .....**$16 00**

One Dozen in a Box

STOCKINGS



Our Stockings are Superior to Anything Ever Offered for Athletic Wear, and Combine All the Essentials of a Perfect Stocking. They are Heavy Ribbed, Full Fashioned, Hug the Leg Closely but Comfortably, and are Very Durable.



PLAIN COLORS

Colors: Black, Navy Blue, Maroon, Royal Blue, Scarlet, White and Green. Per Pair

✣ **No. 3/O** Extra Heavy Worsted, Fancy Ribbed Stitch . . **$2 80**

✣ **No. 1R** —Heavy Weight Worsted, Plain Ribbed Stitch **3 90**

✣ **No. 2R** —Medium Weight Worsted, Plain Ribbed Stitch .. **1 80**

✣ **No. 3R** Good Weight Wool, Plain Ribbed Stitch **1 00**

✣ **No. 4** —Good Weight Cotton, Plain Ribbed Stitch ..... **.80**

All Our Stockings Made with White Feet, Except No. 4

FANCY STRIPED COLORS

Colors: Black and Red, Maroon and White, Orange and Black, Navy Blue and Red Per Pair

✣ **No. 3/OS**—Extra Heavy Worsted, Fancy Ribbed Stitch . . . **$3 20**

✣ **No. 1RS** Heavy Weight Worsted, Plain Ribbed Stitch **2 80**

✣ **No. 2RS** —Medium Weight Worsted; Plain Ribbed Stitch... **1 80**

✣ **No. 3RS** Good Weight Wool, Plain Ribbed Stitch **1 50**

Any Combination of Colors not Described Above can be Furnished Direct from Factory at Same Prices.

✣ **NOTE.—Owing to Large Variety of Colors, Styles and Sizes of Caps, Belts and Stockings, these Goods we do not Carry in Stock and can Only Furnish to Special Order from Factory, which Usually Requires from 5 to 6 Days to Complete.**

"DIAMOND EDGE IS A QUALITY PLEDGE"

SCREW PLATES

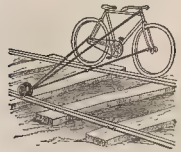
These Screw Plates, with 12 inch Stocks and Two Part Dies, Cut all Sizes from ¼ to ½ inch, with from 20 to 30 Threads.

Per Set

No. 2½S—Ten Pairs Dies; 1 Tap Wrench; 8 Bicycle Taper Taps; Cutting ¼—20 to 30 Right; 5-16—20 to 30 Right; ⅜—20 to 30 Right; ½—20 and 24 Right; ½—20 and 24 Left; Weight per Set 5½ lbs. $25 50

One Set in a Case

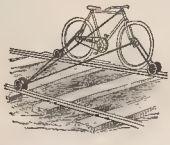
RAILROAD ATTACHMENTS



Each

No. 1—Designed for the Use of Those who are Compelled to Ride Either on Street or Railroad; Easily Attached, takes but Little Room when Telescoped; Double Flanged Wheel Connected with Bicycle by Rigid Triangle of Three Braces; Guides Bicycle Perfectly; Weight 10 lbs. $13.20

One in a Package



Each

No. 2—Intended for Those who have to Carry More or Less of a Load when Riding; Braces Telescope when not in Use, Auxiliary Wheels are Raised and Secured when on the Street. Small Wheels are Double Flanged and Hold the Bicycle Upright. A Good Attachment for Railroad Men; Weight 20½ lbs. $20 00

One in a Bundle

BICYCLE STANDS

Galvanized Steel Sidewalk Racks. Floor Space Required 20 x 22 inches; Blank Space for Dealers' Sign, 7½ x 21 inches, Accommodates Eleven Wheels.

Each

No. 10—Weight Each 10 lbs. $7.20

Loose

MYERS

Galvanized Steel Stands, Thoroughly Well Made from Stock 3-16 inch Thick and ¾ inch Wide; Adjustable by Means of Notched Bar, Reaching from One Frame to the Opposite One, from 12 to 15 inches. Stands 16 inches High; Measurement at Top 4½ inches; at Bottom 11 inches; can be Used with any Size or Style of Bicycle.

Per Dozen

No. 11—Weight Each 7 lbs $18.00

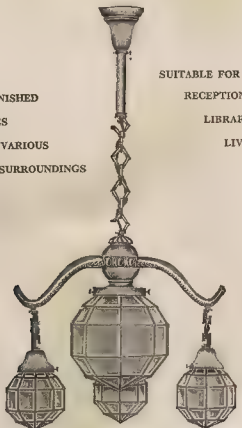
Loose

ELECTRIC FIXTURES

✠ CEILING OR SHOWER LIGHTS

ARTISTIC DESIGNS
BEAUTIFULLY FINISHED
HARMONIZES
WITH VARIOUS
SURROUNDINGS

SUITABLE FOR
RECEPTION HALLS
LIBRARIES
LIVING ROOMS
LARGE BED ROOMS



✠ **No. 912½—Ceiling or Shower Lights,** with Diamond Link Chain; **50-inch Drop;** Center Ball **10 Inches** in Diameter; **Three Smaller Balls 6 Inches** in Diameter, Supported by Ram's Horn Design Arms; Balls Have Mission Effect, with Clear Stripes, Which Give an Iridescent Effect. This Fixture Can Be Used with Tungsten or Regular Lamps; **Four Lights;** Wired Complete; without Bulbs. Finish, **Brushed Brass**..... Each **$32.50**

One in a Box. Shipping Weight, 40 Pounds.

✠ **No. 910½ R—Ceiling or Shower Lights,** with Diamond Link Chain; **50-inch Drop;** Center Globe **10 x 12 Inches,** with Hand Decoration in Egyptian Designs in Rich Gold and Ruby Colors; **Three Balls, 6 Inches** in Diameter, Decorated to Match. **Four Lights;** Wired Complete; without Bulbs. Finish, **Brushed Brass**..... Each **$37.00**

One in a Box. Shipping Weight, 40 Pounds.

✠ **No. 910½ CRI—Ceiling or Shower Lights,** with Diamond Link Chain; **50-inch Drop;** Center Dome **10 Inches** in Diameter, French Roughed Inside; **Three Balls, 6 Inches** in Diameter, Finished to Match; **Four Lights;** Wired Complete; without Bulbs. Finish, **Brushed Brass**..... Each **$30.00**

One in a Box. Shipping Weight, 40 Pounds.

No Additional Charge for Packing.

✠ **Not Carried in Stock. Can Only Be Furnished by Shipping Direct From Factory, Pittsburgh, Pa.**

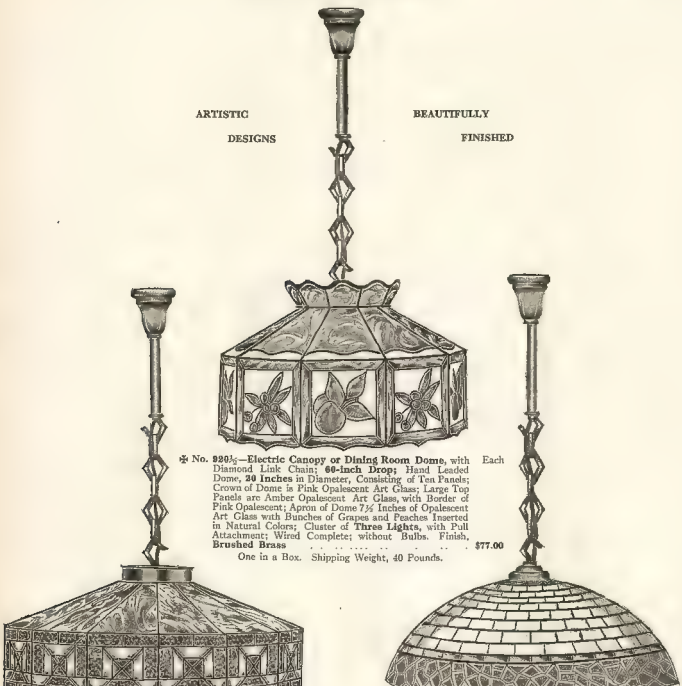
"DIAMOND EDGE IS A QUALITY PLEDGE"

ELECTRIC FIXTURES

✠ CANOPY OR DINING ROOM DOMES

ARTISTIC DESIGNS

BEAUTIFULLY FINISHED



✠ No. 930½—**Electric Canopy or Dining Room Dome,** with Diamond Link Chain; **60-inch Drop;** Hand Leaded Dome, **30 Inches** in Diameter, Consisting of Ten Panels; Crown of Dome is Pink Opalescent Art Glass; Large Top Panels are Amber Opalescent Art Glass, with Border of Pink Opalescent; Apron of Dome 7½ Inches of Opalescent Art Glass with Bunches of Grapes and Peaches Inserted in Natural Colors; Cluster of **Three Lights,** with Pull Attachment; Wired Complete; without Bulbs. Finish, **Brushed Brass** . . . . . $77.00 Each

One in a Box. Shipping Weight, 40 Pounds.

✠ No. 922½ **Electric Canopy or Dining Room Dome,** with Diamond Link Chain; **60-inch Drop; Hand Copper Leaded Dome, 24 Inches** in Diameter, Crown Composed of Large Panels of Green Opalescent Glass, Copper-Leaded by Hand; Apron Made of Small Pieces of Ruby and Green Opalescent Glass, Artistically Arranged and Set by Hand; Cluster of **Four Lights,** with Pull Attachment; Wired Complete; without Bulbs. Finish, **Old Copper Over Brass** . . . . . $90.00 Each

One in a Box. Shipping Weight, 40 Pounds.

✠ No. 926½—**Electric Canopy or Dining Room Dome,** with Diamond Link Chain; **60-inch Drop;** Body of Dome, Amber Opalescent Glass, **Copper Leaded by Hand,** with Border of Small Pieces of Ruby and Green Opalescent Art Glass, Artistically Arranged. Dome, **26 Inches** in Diameter; Cluster of **Four Lights,** with Pull Attachment; Wired Complete; without Bulbs. Finish, **Brushed Brass** . . . . . $110.00 Each

One in a Box. Shipping Weight, 40 Pounds.

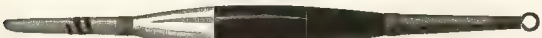
No Additional Charge for Packing.

✠ **Not Carried in Stock. Can Only Be Furnished by Shipping Direct From Factory, Pittsburgh, Pa.**

FISHING FLOATS

*DIAMOND BRAND

THIN BARREL SHAPE



Genuine English, Finest Quality Cork, Bound; Painted in Two Colors, Assorted Red and Green and White and Green; Cotton Filled Quill Top; Wood Stick Bottom with Heavy Brass Screw Eye Line Guide; Varnished and Highly Polished.

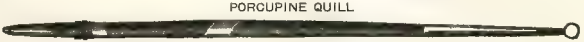
Nos.	DTB4	DTB5	DTB6
Length, Inches	4	5	6
Weight per Dozen, Ozs.	4	5	6
Per Dozen	$5.30	8.30	10 50

Genuine English, Finest Quality Cork, Bound; Painted in Two Colors, Assorted Red and Green and White and Green; **Genuine Porcupine Quill Center;** Quill and Brass Wire Line Guides; Varnished and Highly Polished.

Nos.	COP3	COP4	COP5	COP6
Length, Inches	3	4	5	6
Weight per Dozen, Ozs.	2½	3	3½	4
Per Dozen	$5.50	8.30	13.00	13.50

One Dozen in a Box

PORCUPINE QUILL



Genuine English, Bound; Spring Wire Line Guides; Highly Finished and Varnished.

Nos.	PQ4	PQ6	PQ8	PQ10
Length, Inches	4	6	8	10
Weight per Gross, Ozs.	4	6	8	10
Per Gross	$9.00	16.50	18.00	24.00

Twelfth Gross in a Paper; One Gross in a Box

CORK BALLS

Best Grade Cork; Perfectly Smooth Finish and Varnished; Absolutely Round and True; Holes Drilled for Peg and Line.

Nos.	CB1½	CB1¾	CB1⅞	CB1⅝
Diameter, Inches	1½	1¾	1⅞	1⅝
Weight per Gross, Lbs.	1½	1⅞	2	3
Per Gross	$10 80	12 00	15.00	18 00

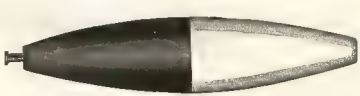
Quarter Gross in a Box

CELLULOID

Celluloid, Hollow; Very Light and Buoyant; Painted in Two Bright Indestructible Colors, Assorted Red and Green, Red and White and Green and White, has Heavy Celluloid Core Through Center with Metal Line Adjuster When Adjuster is Properly Set it will Hold the Float Firmly at Any Position on the Line Desired.

EGG SHAPE

Nos.	EC2½	EC3
Length, Inches	2½	3
Weight per Dozen, Ozs.	6	8
Per Dozen	$8.30	10.50



BARREL SHAPE

Nos.	BC3½	BC4	BC4½	BC5½
Length, Inches	3½	4	4½	5½
Weight per Dozen, Ozs.	5	6	8	9
Per Dozen	$6 80	8.00	11.30	15 00

One Dozen in a Box

Sectional View Showing Center Core on Metal Line Adjuster

FISHING FLOATS

* DIAMOND BRAND

EGG SHAPE

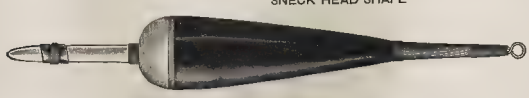
Clear Light Wood, Unbound; Painted in Two Colors; Assorted Red and Green and White and Green; Wood Stick Top with Quill Line Holder; Wood Stick Bottom with Brass Screw Eye Line Guide; Varnished and Polished.

Nos.	W1⅜	W1⅝	W2	W2½	W2⅞
Length, Inches	1¼	1⅜	2	2¼	2½
Weight per Dozen, Ozs.	3	5	7	9	12
Per Dozen	$0.40	.50	.60	.80	90

Genuine English, Finest Quality Cork, Bound; Painted in Two Colors, Assorted Red and Green and White and Green; Cotton Filled; Quill Top; Wood Stick Bottom with Brass Screw Eye Line Guide; Varnished and Highly Polished.

Nos.	DEB1⅜	DEB1⅝	DEB2	DEB2¼	DEB2½	DEB2¾	DEB3
Length, Inches	1½	1¾	2	2¼	2½	2⅝	3
Weight per Dozen, Ozs.	3	5	6	7	10	11	12
Per Dozen	$1.60	1.90	2.20	2.60	3.20	3.80	4.80

SNECK HEAD SHAPE



Genuine English, Finest Quality Cork; Bound; Painted in Two Colors, Assorted Red and Green, White and Green, Red and Black and White and Black; Cotton Filled, Quill Top; Wood Stick Bottom with Brass Screw Eye Line Guide; Varnished and Highly Polished.

Nos.	DSH2	DSH2½	DSH3
Length, Inches	2	2½	3
Weight per Dozen, Ozs.	3	4	4
Per Dozen	$2.00	2.60	3 80

REGULAR BARREL SHAPE

Genuine English, Finest Quality Cork, Bound; Painted in Two Colors, Assorted Red and Green, White and Green, Red and Black and White and Black; Cotton Filled; Quill Top; Wood Stick Bottom with Brass Screw Eye Line Guide; Varnished and Highly Polished.

Nos.	DBB2	DBB2¼	DBB2½	DBB2¾	DBB3	DBR3½	DBB4
Length, Inches	2	2¼	2½	2¾	3	3½	4
Weight per Dozen, Ozs.	3	3	4	5	5	6	7
Per Dozen	$1 40	1.80	2.30	2.70	3 20	3.90	4.80

Genuine English, Finest Quality Cork, Bound; Smooth **Natural Finish;** Unvarnished; Cotton Filled; Quill Top, Wood Stick Bottom with Heavy Brass Screw Eye Line Guide; Very Finely Finished.

Nos.	DUBB2	DUBB2½	DUBB3	DUBB3½
Length, Inches	2	2½	3	3½
Weight per Dozen, Ozs.	3	4	5	6
Per Dozen	$1 40	1.60	1.90	2.20

Genuine English, Finest Quality Cork, Bound; Painted in Bright Colored **Fancy Stripes,** all Assorted Colors; Wood Stick Top with **Hardwood Fancy Striped Pilot Ball;** Wood Stick Bottom with Heavy Brass Screw Eye Line Guide. Very Elaborately Painted, Varnished and Polished

Nos.	ZPB2	ZPB3½	ZPB4
Length, Inches	2	3½	4
Weight per Dozen, Ozs.	4	9	11
Per Dozen	$2 60	3.50	4.10 5.00 6 00

One Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

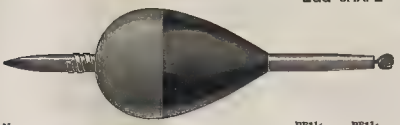
Mizzoo

FISHING FLOATS

Mizzoo

*MIZZOO

EGG SHAPE

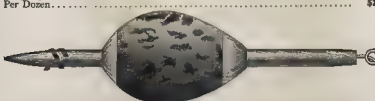


Good Quality Cork, Unbound; Painted in Two Colors, Assorted Red and Green and White and Green; Wood Stick Top with Brass Spring Line Holder; Wood Stick Bottom with Brass Spring Wire Line Guide; Varnished and Highly Polished.

Nos.	FE1½	FE1⅝	FE1¾	FE2	FE2¼	FE2½	FE3
Length, Inches	1¼	1⅝	1¾	2	2¼	2½	3
Weight per Dozen, Ozs	4	6	7	9	10	15	
Per Dozen	$0.80	1.00	1.10	1.40	1.80	2.20	3.20

Good Quality Cork, Unbound; Hard White Maple Tipped at Each End to Protect Cork; Smooth Natural Finish, White Shellaced and Varnished; Painted in Fancy Colored Stripes; Wood Stick Top with Brass Spring Line Holder; Wood Stick Bottom with Brass Spring Wire Line Guide; Highly Polished.

Nos.	FPE1½	FPE1⅝	FPE2	FPE2¼	FPE2½
Length, Inches	1½	1¾	2	2¼	2½
Weight per Dozen, Ozs	5	6	7	9	10
Per Dozen	$1.50	1.80	2.30	2.70	3.50



Good Quality Cork, Unbound, Hard White Maple Tipped at Each End to Protect Cork; Smooth Natural Finish, White Shellaced and Varnished; Wood Stick Top with Brass Spring Line Holder; Wood Stick Bottom with Brass Spring Wire Line Guide. Highly Polished.

Nos.	UPE1½	UPE1⅝	UPE2	UPE2¼	UPE2½
Length, Inches	1½	1¾	2	2¼	2½
Weight per Dozen, Ozs	4	5	7	9	11
Per Dozen	$1.10	1.30	1.80	2.30	2.70

BARREL SHAPE

Good Quality Cork, Unbound; Painted in Two Colors, Assorted Red and Green and White and Green; Wood Stick Top with Brass Spring Line Holder; Wood Stick Bottom with Brass Spring Wire Line Guide. Varnished and Highly Polished.

Nos.	PB1½	PB1⅝	PB2	PB2¼	PB2½	PB3	PB3½	PB4
Length, Inches	1¾	1¾	2	2¼	2½	3	3½	4
Weight per Dozen, Ozs	3	3	4	5	6	7	8	9
Per Dozen	$1.00	1.00	1.10	1.20	1.40	1.80	2.20	2.70

Good Quality Cork, Unbound; Hard White Maple Tipped at Each End to Protect Cork; Smooth Natural Finish, White Shellaced and Varnished; Painted in Fancy Colored Stripes; Wood Stick Top with Brass Spring Line Holder; Wood Stick Bottom with Brass Spring Wire Line Guide. Highly Polished.

Nos.	FPB2	FPB2½	FPB3	FPB3½	FPB4
Length, Inches	2	2½	3	3½	4
Weight per Dozen, Ozs	4	5	7	9	11
Per Dozen	$2.00	2.30	2.70	3.50	3.80

Good Quality Cork, Unbound; Hard White Maple Tipped at Each End to Protect Cork; Smooth Natural Finish, White Shellaced and Varnished; Wood Stick Top with Brass Spring Line Holder; Wood Stick Bottom with Brass Spring Wire Line Guide. Highly Polished.

Nos.	UPB1½	UPB2	UPB2½	UPB3	UPB3½	UPB4
Length, Inches	1¾	2	2½	3	3½	4
Weight per Dozen, Ozs	3	4	5	7	9	11
Per Dozen	$1.10	1.20	1.80	2.30	3.00	3.80

One Dozen in a Box.

POCKET KNIVES

EMPIRE

Forged from Best Pocket Cutlery Steel Known, Thomas Firth & Sons, Sheffield, England; Carefully Hardened and Perfectly Tempered by the Most Skilled and Experienced Cutlers. Celebrated for Perfect Cutting Edges, Ease in Opening of Blades, Superior Finish and Symmetrical Appearance. Every Blade Sharpened and Honed Ready for Use; Free from Flaws and Imperfections. FULLY GUARANTEED.

FANCY PATTERNS

Cuts Three Quarter Size

*DIAMOND EDGE

Oval, **Sterling Silver** Handle, French Gray Finish, Nimrod Design; Length 3 inches; German Silver Lined; Full Crocus Polished Blades.

Per Dozen

No. 2536 —Two Blades, One Large Spear and One Small Pen; Weight per Dozen 10 ozs. **$32.00**

No. 42536—Four Blades, One Large Spear, Two Small Pens and One File; Weight per Dozen 12 ozs. **44.00**

Oval, **Sterling Silver** Handle, French Gray Finish, Angler Design; Length 3¼ inches; German Silver Lined; Full Crocus Polished and Etched Blades.

Per Dozen

No. 2546—Two Blades, One Large Spear and One Small Pen; Weight per Dozen 10 ozs. **$40.00**

No. 42546—Four Blades, One Large Spear, Two Small Pens and One File; Weight per Dozen 14 ozs. **54.00**

*DIAMOND EDGE

Oval, **Sterling Silver** Handle, French Gray Finish, Floral Design; Length 3 inches; German Silver Lined; Full Crocus Polished and Etched Blades.

Per Dozen

No. 2721 —Two Blades, One Large Spear and One Small Pen; Weight per Dozen 10 ozs **$40 00**

No. 42721—Four Blades, One Large Spear, Two Small Pens and One File; Weight per Dozen 14 ozs. **54.00**

Congress, Sterling Silver Handle, French Gray Finish, Water Lily Design; Length 3½ inches; German Silver Lined; Hand Milled Backs; Full Crocus Polished and Etched Blades.

Four Blades, One Large Congress, Two Small Pens and One File; Weight per Dozen 22 ozs.

Per Dozen

No. 4S2943/4SS—*DIAMOND EDGE **$60.00**

No. 4E2943/4SS—Empire **60.00**

Oval, **German Silver** Handle, Bronze Finish, Art Design; Length 3¼ inches; Unlined; Half Crocus Polished and Etched Blades.

Two Blades, One Large Spear and One Small Pen; Weight per Dozen 16 ozs.

Per Dozen

No. 2S342M – *DIAMOND EDGE **$16 00**

No. 2E342M – Empire **16 00**

Oval, **German Silver** Handle, Oxidized Silver Finish, Art Design; Length 3¼ inches; German Silver Lined; Half Crocus Polished and Etched Blades.

Two Blades, One Large Spear and One Small Pen: with Cork Screw, Wire Cutter and Bottle Cap Remover; Weight per Dozen 16 ozs.

Per Dozen

No. 4S347M – *DIAMOND EDGE **$38.00**

No. 4E347M—Empire **36.00**

Half Dozen in a Box

Exclusive Western and Southern Distributers for the Product of the Empire Knife Co., Winsted, Conn.

"DIAMOND EDGE IS A QUALITY PLEDGE"

Diamond Edge POCKET KNIVES

"Diamond Edge is a Quality Pledge"

VALUABLE HINTS
FOR THE USE OF THE
RETAIL SALESMAN

Diamond Edge Pocket Knives

QUALITY Blades made of the celebrated **Thomas Firth & Sons' English Pocket Cutlery Steel**—same that is used in the oldest and most celebrated Sheffield make of Pocket Knives. Every blade tested with a hammer to detect flaws; highly tempered, slightly hollow ground edges, which are keen as a Razor; extra finely finished and perfectly fitted. They are easy to open with the finger nail.

HANDLES Perfectly fitted, full and nicely finished in every respect. The Knives are made by the most skilled Cutlers that it is possible to obtain who work for **Quality—Not** for **Quantity.**

WARRANT All Knives bearing our *Diamond Edge* Brand are fully warranted and represent the acme of perfection. Knives which are much worn or have been re-ground by consumers or dealers, who are usually inexperienced grinders, and draw the temper out of the blades, thus spoiling them, should not be replaced. Dealers should also not be called upon to replace Knives with the points of the blades sticking up out of the handles, as this is no fault of the Knives—on account of dust, dirt and lack of oiling the joints wear away and cause this seeming defect.

NORVELL-SHAPLEIGH HARDWARE CO.,
ST. LOUIS, U. S. A.

In Each Package of *Diamond Edge* Pocket Knives is Placed the Circular Reproduced Above

"Hint Slips" Are Placed in All *Diamond Edge* Cutlery and Tool Packages

They Help You Talk *Diamond Edge* Cutlery and Tools Intelligently

Diamond Edge POCKET KNIVES

NAMES OF BLADES

SMALL PEN BLADE

COPING BLADE

BUDDING BLADE

WHARNCLIFFE BLADE

SPEAR BLADE

SPEYING BLADE

RAZOR BLADE

SHEEP FOOT OR CONGRESS BLADE

CORN KNIFE BLADE

CLIP BLADE

PRUNING BLADE

SABER BLADE

Diamond Edge POCKET CUTLERY

Our *Diamond Edge* Pocket Knives are celebrated for their superior quality, style and finish. They are unsurpassed by any others. The blades are forged from The Celebrated Thomas Firth & Sons English Pocket Cutlery Steel, and are hardened and finely tempered by the most skilled and experienced cutlers. Their walk and talk is of unusual ease. Every knife is sharpened ready for use and is guaranteed free from flaws and imperfections. Any not proving so will be replaced; but we will not redeem knives that are worn out or that show abuse or when more than one blade is broken. In whetting a pocket knife use a good oil stone, holding the blade at an angle of twenty degrees, and draw towards you from heel to point. Oil the joints occasionally, as they are liable to wear rough and the blade points protrude.

Norvell-Shapleigh Hardware Co., St. Louis, U. S. A.

The Above is a Fac-Simile of the Wrapper Placed Around Each *Diamond Edge* Pocket Knife

POCKET KNIVES

*DIAMOND EDGE (FANCY PATTERNS)

EMPIRE

Forged from Best Pocket Cutlery Steel Known, Thomas Firth & Sons, Sheffield, England; Carefully Hardened and Perfectly Tempered by the Most Skilled and Experienced Cutlers. Celebrated for Perfect Cutting Edges, Ease in Opening of Blades, Superior Finish and Symmetrical Appearance. Every Blade Sharpened and Honed Ready for Use; Free from Flaws and Imperfections. FULLY GUARANTEED.

Cuts Three Quarter Size

No. 2DEG

No. 42DEG

Our Extra Fancy Pocket Knives as shown above are in a Class by themselves. Considered from an Artistic Standpoint, no Knife has ever been Offered which can Equal them in Beauty of Design and Finish. The Materials Entering in the Construction are of an Extreme High Quality and all Parts Fitted to an Exact Nicety. No Knives could be More Desirable than These for Gift purposes.

Extra Heavy Oval **Pearl Handles,** Invisibly Riveted; German Silver Lined and Handsomely Hand Milled; Heavy Beaded **Rolled Gold** Bolsters and Shield; Full Crocus Polished and Etched Blades, Flush Joints.

Per Dozen

No. 2DEG —Two Blades, One Large Spear and One Small Pen; Length 2¾ inches; Weight per Dozen 10 ozs. **$44.00**
No. 42DEG—Four Blades, One Large Spear, Two Small Pens and One File; Length 2¾ inches; Weight per Dozen 12 ozs. **64.00**
No. 4DEG —Four Blades, One Large Spear, Two Small Pens and One File; Length 3 inches; Weight per Dozen 16 ozs. **80.00**

No. 44.

Oval **Sterling Silver** Handle, French Gray Finish; Length 2¾ inches; Floral Design; German Silver Lined; Full Crocus Polished Blades.

Per Dozen

No. 28—Two Blades; One Large Spear and One Small Pen, Weight per Dozen 7 ozs. **$32.00**
No. 34—Four Blades; One Large Spear, Two Small Pens and One File; Weight per Dozen 10 ozs. **40.00**

Oval, **Sterling Silver** Handles, French Gray Finish, Locust Design; Length 2¾ inches; German Silver Lined; Milled Backs; Full Crocus Polished Blades.

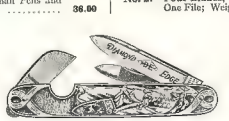
Per Dozen

No. 28G—Two Blades, One Large Spear and One Small Pen; Weight per Dozen 8 ozs. **$32.00**
No. 34G—Four Blades, One Large Spear, Two Small Pens and One File; Weight per Dozen 10 ozs. **36.00**

Oval, **Sterling Silver** Handle, French Gray Finish, Art Design; Length 3 inches; German Silver Lined; Full Crocus Polished Blades.

Per Dozen

No. 22 Two Blades, One Large Spear and One Small Pen; Weight per Dozen 10 ozs. **$32.00**
No. 27 Four Blades, One Large Spear, Two Small Pens and One File; Weight per Dozen 12 ozs. **44.00**



Per Dozen

No. 341 Oval, **Sterling Silver** Handle, French Gray Finish; Columbia Design; Length 3¼ inches; German Silver Lined; **Three Blades,** One Large Spear, One File and One Cigar Cutter with Patent Spring Opener; Full Crocus Polished and Etched; Weight per Dozen 16 ozs. **$54.00**

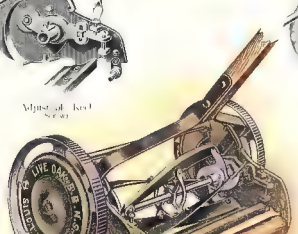
Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

LAWN MOWERS

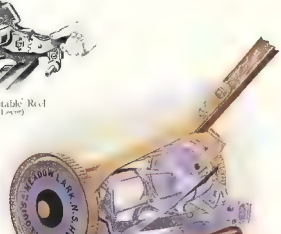
*LIVE OAK BALL BEARING

Adjusting Reel Screw



*MEADOW LARK BALL BEARING

Adjustable Reel Handle



Drive or Gear Cage

Latch Lever, Ball Bearing

Double Gearing

Ball Bearing Adjustable Reel; With Crucible Steel, Oil Tempered Blades and Malleable Iron Braces, Heavy Cast Iron Drive Wheels, Side Plates, Gear Cages and Bed Plate; Steel Cross Bar; Solid Axle. Stationary Crucible Steel Cutter Bar; Steel Ball Bearing Cup or Race Securely Set in Cast Iron Head, with Tempered Steel Cones Inserted in the Adjusting Plates of the Machine. One of the Cones is Made with Four Holes into which a Wrench Can Be Fitted to Take up any Lost Motion in the Reel Shaft. Double Geared Both Sides; Double Steel Sliding Pin Ratchet; Adjustable Hardwood Roller; Wrought Steel Handle Braces; 45½ foot Varnished Hardwood Handle, with Cross Bar Set in Malleable Iron Bracket and Bolted On the Inside. Each Wheel there is a Grass Shield, which Knocks Down the High Grass and Prevents its Winding Around the Journals.

The Machine is Operated by a Combination Clutch and Pinion with Two Pins in Each Clutch, which Operate at 80 Degree Angle to Each Other, Through Holes in the Reel Shaft, Alternately Coming in Contact with the Projections of the Clutch and if these Clutch Pins are at Variance with those at the Opposite End of the Reel Shaft, it is Impossible to Move the Machine Forward at all without Giving an Impulse to the Reel. This Clutch and Pinion Operates Equally Well on Curves and on Turning Corners as on Straight Work, and Prevents any Possibility of Side Draft. It also Works Equally Well when Mowing on Hillside or Level Ground.

*LIVE OAK—BALL BEARING

Screw Adjustment

High Wheel; Four Blade Reel

Gold and Silver Bronzed; Green Knives and Name Plate; Extra Wide Gear, Heavy Blades, Giving Great Strength and Added Momentum to the Reel, Allowing Smoothly Steady Action and Ease of Operation.

Diameter of Drive Wheels 10 inches. Diameter of Reel 9 inches. Width of Blades 14½ inches; Reel Axle ⅝ inch. Front Bar 11-16 inch. Adjustable to Cut Grass to Lengths of 2 to 11½ inches. Cuts Grass Standing 7 inches High.

Width of Cut, Inches	14	16	18	20
Extreme Width, Inches	19¾	21¾	23¾	25¾
Weight Boxed, Lbs.	68	80	65	75
Each	$10 00	11 00	12 00	13 00

One in a Box. Handles Half Dozen to a Bundle

*MEADOW LARK BALL BEARING

Lever Adjustment

Low Wheel; Three Blade Reel

Silver Bronzed; Red and Gold Trimmings, a Very Substantial Easy Running, Low Priced Ball Bearing Mower.

Diameter of Drive Wheels 8 inches. Diameter of Reel 6 inches. Width of Blades 11 inches. Reel Shaft 1 inch. Front Bar ⅝ inch.

Adjustable to Cut Grass to Lengths of 1½ to 11½ inches. Cuts Grass Standing 5 to 6 inches High.

Width of Cut, Inches	12	14	16	18
Extreme Width, Inches	15¾	17¾	19¾	21¾
Weight Boxed, Lbs.	41	43	45	47
Each	$6 50	6 50	7.00	8 00

One in a Box, Handles Half Dozen to a Bundle

Lawn Mower Parts are Not Carried in Stock. Can Only be Furnished by Shipping Direct from Factory

Use Diamond Oil and *Diamond Edge* Lawn Mower Paste

"Diamond Edge is a Quality Pledge"

LAWN MOWERS

*LAWN MAKER—PLAIN BEARING

Double Gearing

Ratchet and Bearing

*WHITE CLOVER PLAIN BEARING

Patented Screw Adjusting Cutter Bar

Double Gearing

Wheels, Side Plates and Cutter Bar Castings of Good Quality of Gray Iron. Malleable Iron Reel Braces Perfectly Fitted and Riveted to Reel Shaft, which Makes it Impossible to Spring the Reel. The Roller Bracket is Malleable Iron Eliminating the Possibility of Breakage, and is Built with a Gudgeon Entering the Roller 2¼ Inches Instead of an Iron Pin Driven Into the Roller, Running in a Hole in the Bracket. This Does Away with the Roller Splitting, after it is Subjected to Weather conditions, and Runs Noiselessly.

The Shrub Rod and Reel Shaft are of Best Cold Rolled Steel Shafting, Each Being ⅝ inch in Diameter and are Guaranteed Not to Vary .001 of an Inch from Size. The Axle for the Wheels is Formed by the Shrub Rod Passing Through the Center of the Side Plates, Enabling the Wheels to Turn on Same. Bearings which Add to the Easy Running Qualities of this Machine

Reel Bearings are Equipped with Brass Bushings and Lock Nut Set Screws for Taking up any Lost Motion. Geared on Each Side, the Pinions Having Deep Cut Teeth, which Engage Strongly and Firmly in the Gearing at the Wheel, Giving Long Life and Durability.

The Flat, Lapped Steel Pawls are Extra Large and Thoroughly Tempered to Prevent Wear or Breakage.

Cutter Bar Adjustment Most Screw Adjustments Have Two Screws Acting Against Each Other on Either Side of the Pivotal Point. With This Construction the Cutter Bar Blade is Sure to be Sprung when a Close Adjustment is Attempted To Obviate this Some Manufacturers Have One Screw Operate from the Top and the Other from the Bottom with the Objection that the Mower Must be Turned Upside Down for Adjustment. Both Difficulties are Overcome by a New Patented Device which Permits Both Screws to be Operated from the Top and Against a Finger Extended from the Main Body of the Bar.

*LAWN MAKER PLAIN BEARING

High Wheel, Four Blades

Aluminum Body, Gold Wheels, Trimmed in Dark Blue and Silver

Diameter of Drive Wheels 10½ inches; Diameter of Reel 6 inches Four Heavy Cutting Blades of High Grade Crucible Steel, Oil Tempered, Shear Cut and Self Hardening; Ground Under Running Water to Preserve the Temper All Bearings Carefully Machined and Fitted

Adjustable to Cut Grass to Lengths of 5-16 to 1½ Inches Cuts Grass Standing 7 Inches High

A Durable Handle and Roller of Hard Maple, Thoroughly Seasoned and Neatly Varnished.

Width of Cut, Inches	14	16	18	20
Extreme Width, Inches	18 19-32	22 19-32	24 19-32	26 19-32
Weight Boxed, Lbs	50	53	56	60
Each	$7 50	$ 00	$ 50	$ 00

One in a Box; Handles Half Dozen in a Bundle

*WHITE CLOVER—PLAIN BEARING

High Wheel; Three Blades

Empire Red with Gold Bronze Wheels and Decorations

Diameter of Drive Wheels 9 inches; Diameter of Reel 5 ½ inches, Shrub Rod ⅝ inch; Reel Shaft 9-16 inches; Three Cutting Blades of Crucible Steel, Carefully Tempered, Water Ground and Self Sharpening.

Adjustable to Cut Grass to Lengths of ½ to 1¼ inches. Cuts Grass Standing 5 to 6 inches High

A Varnished Handle and Roller of Hardwood Maple.

Width of Cut, Inches	12	14	16	18
Extreme Width, Inches	18 19-30	20 19-32	22 19-32	24 19-32
Weight Boxed, Lbs	43	45	47	49
Each	$4 50	$ 50	$ 50	$ 00

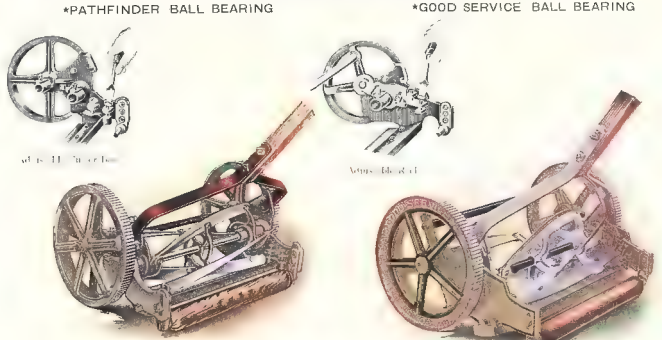
One in a Box; Handles Half Dozen in a Bundle

Extra Parts for Lawn Mowers Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

LAWN MOWERS

*PATHFINDER BALL BEARING *GOOD SERVICE BALL BEARING



Double Gearing Ratchet and Bearing Double Gearing

Stationary Revolving Adjustable Cutter Steel Reel Blades and Adjustable Cutter Bar, Vulcan Malleable Iron Rear Bracket & Bar Stop Rod, Heavy Cast Iron Wheels, Steel Pressed Gear Casings and Bed Plate, Steel Cross Bar, Steel Ball Bearing Cup or Race, Steel Axle, with Tempered Steel Cones Inserted in the Side Plates of the Machine. One Hub Cone is Made with Four Holes into which a Wrench can be Fitted to Lock any Lost Motion on the Reel Shaft. Double Geared Both Sides. Double Steel Sliding Pin Ratchet. Adjustable Hard Wood Roller. Wrought Steel Handle Braces, 3/4 x 5/16 Cross Bar Stay Rod. Hardwood Handle with Cross Bar Set in a Malleable Iron Bracket and Bolted.

*PATHFINDER BALL BEARING

Recommended as a First Class Medium Priced Ball Bearing Mower.

High Wheel, Four Blade Reel

Gold and Silver Bronzed. Crimson Cross Bar and Handle Irons.

Diameter of Wheels 9 inches. Diameter of Reel 6 inches. Width of Blades 11 1/2 inch; Reel Shaft 7/8 inch; Front Bar 5/8 inch.

Adjustable to Cut Grass to Lengths of 1/2 to 1 1/4 inches. Cuts Grass Standing 5 to 6 inches High.

Width of Cut, Inches	14	16	18	20
Extreme Width, Inches	20 11-16	22 1/2 16	24 11 16	26 11-16
Weight Boxed, Lbs.	55	57	60	65
Each	$8 50	9 00	9 50	10 00

Ball Bearing Adjustable Reel, with Five Crucible Steel Oil Tempered, Blades and Malleable Iron Braces. Heavy Cast Iron Spoke Pattern Wheels. Gear Casings and Bed Plate, Steel Cross Bars, Solid Axle, Steel Ball Bearing Cup or Race, Steel Cutter Bar, Steel Ball Bearing Cup or Race, Steel Axle, with Tempered Steel Cones Inserted in the Adjusting Plates of the Machine. One of the Cones is Made with Four Holes into which a Wrench Can Be Fitted to Lock any Lost Motion on the Reel Shaft. Double Geared Both Sides. Double Steel Sliding Pin Ratchet. Adjustable Hardwood Roller. Wrought Steel Handle Braces, 3/4 x 5/16 Cross Bar Stay Rod. Hardwood Handle and Cross Bar Set in a Malleable Iron Bracket and Bolted. Extra Heavy and Wide Reel Blades, Giving Great Strength and Added Momentum to the Reel Affording a Smooth, Steady, Action and Ease of Operation.

*GOOD SERVICE BALL BEARING

Expressly About This Material Designed and Constructed to Give Good Service and Give Excellent Satisfaction in Every Way.

High Wheel; Five Blade Reel

Silver and Gold Bronze. Bright Green Trimmings.

Diameter of Wheels 9 inches. Diameter of Reel 6 inches. Width of Blades 11 1/2 inches. Reel Shaft 7/8 inch. Front Bar 1 1/4 inch.

Adjustable to Cut Grass to Lengths of 1/2 to 1 1/4 inch. Cuts Grass Standing 5 to 6 inches High.

Width of Cut, Inches	14	16	18	20
Extreme Width, Inches	19 1/2	21 1/2	23 1/2	25 1/2
Weight Boxed, Lbs.	68	71	73	76
Each	$11 00	12 00	13 50	14 50

One in a Box, Handles Add Dozen in a Bundle

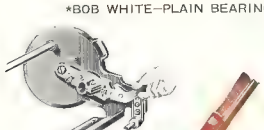
Extra Parts for Lawn Mowers Not Carried in Stock; Can Only Be Furnished by Shipping Direct From Factory

Use Diamond Oil and *DIAMOND EDGE* Lawn Mower Paste

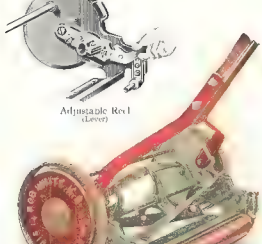
"DIAMOND EDGE IS A QUALITY PLEDGE"

LAWN MOWERS

*BOB WHITE—PLAIN BEARING



Adjustable Reel (Lever)



Double Gearing

Ratchet and Bearing

Adjustable Reel, Crucible Tool-Steel Knives; Malleable Iron Reel Braces; Solid Steel Axle; Wrought **Steel Side Plates;** Heavy Cast Iron Drive Wheels, Gear Casings and Bed Plate; Tool Steel Bed Knife Riveted to Stationary Bed Plate; Malleable Roller Brackets, Hardwood Adjustable Roller with Steel Rod Axle, Steel Pipe Front Brace with Steel Rod Inside, Wrought Steel Handle Braces; Fitted with Combination Clutch and Pinion with Pin Shoeing Pins on Each Side of the Machine. 1 foot Varnished Hardwood Handle with Cross Bar Set in Malleable Iron Socket and Bolted. All Bearings Carefully Milled. The **Steel Side Plates** are Made of Heavy Rolled Steel and Illustrated Needless to say, all working parts are Kept Away with One of the Most Expensive and Troublesome Items in Replacing Parts. Cuts Do Not Have Parts Chipped Around the Rim, which Not Only Improves the Appearance but Gives it Strength as well. The Front Brace is so High upon the Wheels to Permit the Grass to Pass in Contact with the Blades without Being Bent Forward. Only an Inch of Each Wheel There is a Grass Guard which Knocks Down the Long Grass and Prevents its Winding Around the Journals.

Double Gearing

*BOB WHITE PLAIN BEARING

Low Wheel, Three Blades

Plain Covered Axle Reel with Cold Bronze Strips. A Light Running Mower, with Material so Placed as to Obtain the Greatest Strength without Unnecessary Weight.

Diameter of Drive Wheels 8 Inches; Diameter of Reel to Inch 4; Reel Shaft 7/8 inches; Front Brace 1 Inch. Adjustable to Cut Grass of Length of 1½ to 1¾ inches. Cuts Grass Standing 5 to 6 Inches High

Width of Cut, Inches	12	14	16	18
Extreme Width, Inches	15½	17½	19½	21½
Weight Boxed, Lbs.	40	42	44	46
Each	$4 50	$ 4 50	$ 4 50	$ 5 00

Adjustable Reel, Crucible Tool-Steel Knives, Malleable Iron Reel Braces, Solid Steel Axle and Tubular Front Brace, Heavy Cast Iron Drive Wheels, Gear Casings, Side Plates and Bed Plate Malleable Iron Reel Braces and Roller Brackets; Tool Steel Bed Knife Riveted to Stationary Bed Plate; Adjustable Hardwood Roller with Steel Rod Axle, Wrought Steel Handle Braces, Fitted with Combination Clutch and Pinion with One Sidhag Pin on Each Side of the Machine, 3/4 foot Varnished Hardwood Handle with Cross Bar Set in Malleable Iron Socket and Bolted. All Bearings Carefully Milled. The Drive Wheels are Made with an Open Space between Rim and Gear Part, which Not Only Improves the Appearance but Makes the Machine Practically Noiseless when in Operation. On the Inside of each Wheel there is a Grass Shield which Knocks Down the High Grass and Prevents its Winding Around the Journals.

*WHITE CLOUD PLAIN BEARING

High Wheel; Four Blades

Steel and White with Cold Bronze Strips. The Perfection in Lawn Mower Construction in Plain Bearing Machines.

Diameter of Drive Wheels 10 Inches. Diameter of Reel to Inch Reel Shaft 5/8 inches; Front Brace 1¼ inch with 5/8 inch Rod Inside of Pipe. Adjustable to Cut Grass to Lengths of 1¾ to 1¾ inches. Cuts Grass Standing 6 to 7 Inches High

Width of Cut, Inches	14	16	18	20
Extreme Width, Inches	19½	21½	23½	25½
Weight Boxed, Lbs.	56	60	64	66
Each	$8 50	$ 9 00	$ 9 00	$ 10 00

One in a Box; Handles Half Dozen in a Bunch

Lawn Mower Parts Are Not Carried in Stock, Can be Furnished Only by Shipping Direct From Factory

Use Diamond Oil and *Diamond Edge* Lawn Mower Paste

"Diamond Edge is a Quality Pledge"

LAWN MOWERS

★*DIAMOND EDGE*—BALL BEARING

Ratchet and Bearings

GUARANTEE

DIAMOND EDGE Mowers are guaranteed against breakage in transit. We replace any part that breaks on account of flaw or other imperfections.

CYLINDER BLADES Extra heavy, giving momentum to reel, which makes it cut faster than other mowers.

SELF SHARPENING This feature is especially good. Construction of bed plate is such that the revolving blades keep sharp all the time.

BALL BEARING Extreme simple in construction, very positive and accurate in adjustment. Cones are turned from a bar of tool steel and are very durable.

FENDERS There is a fender on the side plate of each wheel, which prevents grass from winding and clogging the journals.

Double Gearing

Manner of Adjusting

★*DIAMOND EDGE*—BALL BEARING

Ball Bearing; High Wheel; Self Sharpening; Gold and Silver Bronzed; Blue and Crimson Trimmed

Ball Bearing Reel With Five Extra Heavy and Wide Crucible Steel, Oil Tempered Blades; Self Sharpening. This Additional Width and Weight Gives Greater Momentum. Handle Is Set to Move Easily and with Less Exertion Than Other Machines. Is Accurate, Smooth and Light Running. The Main Bearings Are Heavy and Extra Long, Giving Great Wearing Surface. Result, the Reel Runs Easily, Adjusts and Stays Adjusted, and as So Doing Does Not Throw the Blades Out of Line with the Cutting Bar.

Frame—Refined Cast Iron Wheels, Side Plates, Gear Castings and Adjustable Bed Plate; Strongly Braced and Reinforced; Malleable Iron Adjustable Bed Plate, with Crucible Steel Oil Tempered Cutter Bar, Malleable Iron Adjustable Roller Brackets; On the Inside of Each Wheel, there is a Grass Shield, which Keeps Down the Tall Grass, Preventing Its Tangling in the Journals.

Heavy Cast Drive Wheel Bearings, Steel Ball Bearing Reel Axle; Double Geared on Both Sides with Steel Bushed Hardened Gear and Double Sprocket Steel Pitch Chain; Crucible Steel Adjustable Cones and Ball Retainer Steel Cross Bar Handle and Roller with Steel Rod Axle; Bent Steel Handle Braces.

Handle—Made of Straight Grain Varnished Hardwood, with Cross Bar Set in Malleable Iron Bracket and Bolt.

With Five Reel Knives 1¾ inches Wide; Diameter of Reel 6 inches; Diameter of Drive Wheels 10 inches; Front Bar 13 Inches; Reel Axle ⅞ inch; Adjustable to Cut Grass to Lengths of ½ to 1 inch. Cuts Grass Standing 7 inches High.

Width of Cut, Inches	15	17	19	21
Each	20¾	22¾	24¾	26¾
Weight Each Boxed, Lbs.	62	64	68	72
Each	$17.00	19.00	21.00	23 00

One in a Box, Handles, Half Dozen in a Bundle

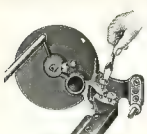
Extra Parts for Lawn Mowers Not Carried in Stock; Can Only Be Furnished by Shipping Direct From Factory

Use Diamond Oil and *DIAMOND EDGE* Lawn Mower Paste

"DIAMOND EDGE IS A QUALITY PLEDGE"

LAWN MOWERS

★RUGBY—BALL BEARING



Patented Screw Adjusting Cutter Bar

Double Gearing

★MOUND CITY—BALL BEARING

Patented Screw Adjusting Cutter Bar

Automatic Ball Bearing Adjustment
(Same description as on Norleigh, Page 612)

Double Gearing

★RUGBY BALL BEARING

High Wheel; Four Blade Reel

Finish—Silver Body, Gold Wheels, Decorated in Light Green.

A Splendid Ball Bearing Mower of Medium Weight and Size, Having Our "Four-squared" Frame Construction. All Parts Accurately Machined, a Second Cut Item, taken on Each Operation to Insure Mathematical Exactness so that they will Assemble without the Least Particle of Strain. Only Materials of First Quality are Used. Best Possible Mixture of Gray Iron Used for the Wheel, Side Plate, Pinion and Cutter Bar Castings. Free from Flaws and. Non-brittle. Bottom of Cutter Bar is Planed to a True Surface, so that the Stationary Knife can be Firmly Riveted to it and have a Perfect Bearing.

Malleable Iron Reel Braces are Securely Riveted to the Solid Steel Reel Shaft and Cutting Blades, Forming a Reel Impossible to be Twisted out of Alignment. Adjustable Malleable Iron Roller Brackets, Entering the Roller 2¾ inches. A Cold Rolled Steel Shrub Rod ⅝ inch in Diameter with Turned Shoulders which Fit Snugly into the Side Plates.

The Ball Bearing Cones are of Best Grade Tool Steel, Tempered Glass Hard and will Never Show Signs of Wear. Only Steel Balls of Class "A" are Used, and are German Imported.

Four Cutting Knives of Good Crucible Steel, Carefully Hardened, Water Ground, Shear Cut and Self Sharpening.

Drive Wheels 9 inches; Diameter of Reel 5½ inches; Reel Axle 9-16 inches, Adjustable to Cut Grass to Lengths of ¾ to 1¾ inches. Cuts Grass Standing 5 to 6 inches High. Geared on Both Sides with a Double Sliding Case Hardened Steel Pawl Ratchet. Screw Adjusting. Guaranteed to be the Lightest Running Mower of its Type on the Market. Handle and Roller of Carefully Selected Hardwood Stock, Lacquered to Protect from the Weather.

Width of Cut, Inches	14	16	18	20
Extreme Width, Inches	19¾	21¾	23¾	25¾
Weight Boxed, Lbs.	44	47	50	53
Each	$8.00	8.50	9.00	9.50

★MOUND CITY BALL BEARING

High Wheel; Four Blade Reel

Finish; Gold and Aluminum Bronze, Trimmed in Light Green, Handle and Roller Shellacked, and Varnished.

This Mower is Most Graceful in Outline, Very Light and Easy Running. Careful Workmanship Throughout and all Materials are of Best Grade. Refined Cast Iron Wheels, Side Plates, Pinions and Cutter Bar, Strongly Braced and Reinforced. A 3-8 inch Reel Shaft, and ⅝ inch Shrub Rod of Machinery Steel Rolled within .001 of an inch True to Size. The Drive Wheels are Accurately Milled to Fit the Shrub Rod which Passes Through the Side Plates, Forming an Axe for the Wheels. This Feature Permits the Wheels to Revolve Quite Freely.

Machined "Bosses" on the Side Plates Fit Tightly into Recesses in the Cutter Bar which Produces a Very Strong Frame Construction at this Point.

Wide, Deep Cut Teeth on the Inside of the Pinions with Double Lipped, Flat and Durable Tempered Pawls Form a Secure and Easy Operating Ratchet.

The Handle is of Straight Grained Hardwood and is Fastened to the Handle Grip by Means of Two Malleable Iron Brackets and a Joint Bolt.

All Ball Bearing Parts are of Good Quality, the Cones Having an Extremely Deep Case Hardening. An Absolutely Perfect Cylinder is Maintained in the Construction and Grinding of the Reel so that it Turns Freely in its Bearings, thus Requiring Less Exertion to Operate and also Touches Evenly on the Stationary Knife, Insuring a Smooth Cut Lawn. Four Cutting Knives of Crucible Steel, Oil Tempered, Self Sharpening and Ground Under Running Water.

Drive Wheels 9 inches; Diameter of Reel 5½ inches; Adjustable to Cut Grass to Lengths of ¾ to 1¾ inches. Cuts Grass Standing 5 to 6 inches High.

Width of Cut, Inches	12	14	16	18
Extreme Width, Inches	18⅝	20⅝	22⅝	24⅝
Weight Boxed, Lbs.	43	45	49	52
Each	$7.00	7.50	8.00	8.50

One in a Box. Handles Half Dozen in a Bundle

Extra Parts for Lawn Mowers Not Carried in Stock; Can Only Be Furnished by Shipping Direct From Factory

Use **Diamond Oil** and *Diamond Edge* **Lawn Mower Paste**

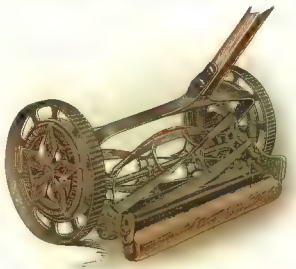
"Diamond Edge is a Quality Pledge"

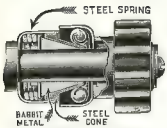
Patented Screw Adjusting Cutter Bar

LAWN MOWERS

*NORLEIGH BALL BEARING

HIGH WHEEL FIVE BLADE REEL





Automatic Ball Bearing Adjustment

Double Gearing

Finish—Gold Bronze, Decorated in Empire Red

The Wheels, Side Plates and Cutter Bar Castings are of Soft Gray Iron, Not of the Brittle Grade which Easily Breaks, and all Vital Points are Thoroughly Strengthened and Reinforced in Order that there be no Excessive Weight Throughout the Castings, which is so Detrimental to Good Mechanical Construction. Malleable Iron Reel Braces and Roller Brackets.

Frame—All Connecting Points and Bearings Perfectly Machined. A Second Cut is Taken on Each Operation to Insure Exact Dimensions to the .001 Part of an Inch. Shoulders are Milled on the Ends of the Steel Shrub Rod and Recesses are Milled in the Ends of the Cutter Bar. The Distance from One Shoulder to the Other on the Shrub Rod is Precisely the Distance from One Recess to the Other in the Ends of the Cutter Bar. Thus the Machine is "Four-squared" and in Perfect Alignment, able to Withstand the Hardest Service and Neither Collapse Nor Bend.

Automatic Ball Bearing Adjustment—This is the Most Important Invention of Recent Years in Lawn Mower Construction. It Consists of a Hardened Steel Spring Working against a Collapsible Babbitt Sleeve around the Shaft and Inside Cone. At the Instant all Looseness is Taken Up the Sleeve Collapses on the Shaft, thus Preventing any Further Pressure than is Required for the Most Delicate Adjustment so that the Reel will always Revolve Freely. Throughout the Life of the Mower this Adjustment Continues to Accommodate Itself to Conditions, Keeping the Bearings always Nicely Adjusted without the Slightest Attention from the Operator. No Mechanism Depending on the Sense of Touch can by any Possibility be so Nicely Adjusted. In Fact, Devices for Hand Adjustment often Become the Ruin of Good Mowers by those who do not Understand. While the Patented Device We Use Automatically Adjusts, it is Completely Enclosed so that an Ignorant Operator can not Get at it even though He Tries to do so. No Screws to Lose Out. Always Ready for Service.

The Ball Bearing Cones are of the High Speed Steel, Tempered Under a Secret Process and Guaranteed not to Show the Slightest Wear During the Life of the Mower. The Ratchet is Formed by Internal Teeth in the Pinion and a Case Hardened Steel Pawl with a Lock Lip which Passes Through the Steel Reel Shaft, Making the Most Positive and Durable Ratchet in Existence. Geared on Both Sides.

Five Extra Heavy Cutting Knives of Finest Crucible Steel, Oil Tempered, Shear Cut, Self Sharpening and Ground Under Water by the Same Processes Used in the Manufacture of the Best Cutlery.

Patented Screw Adjusting Cutter Bar. Drive Wheels 10½ inches. Diameter of Reel 6 inches. Reel Shaft ⅝ inch. Adjustable to Cut Grass to Lengths of 5-16 to 1⅛ inches. Cuts Grass Standing 6 to 7 inches High.

Hard Maple Handle and Roller, Carefully Shellaced and Varnished.

Width of Cut, Inches	**14**	**16**	**18**	**20**
Extreme Width, Inches	19¾	21¾	23¾	25¾
Weight, Each Boxed, Lbs	80	83	86	89
Each	**$11 00**	**12 00**	**13 00**	**14 00**

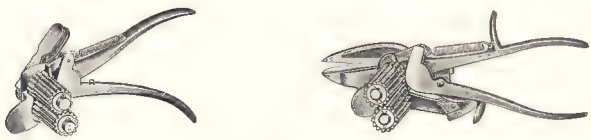
One in a Box; Handles Half Dozen in a Bundle

Extra Parts for Lawn Mowers Not Carried in Stock; Can be Furnished Only by Shipping Direct from Factory

Use Diamond Oil and *DIAMOND EDGE* Lawn Mower Paste

"DIAMOND EDGE IS A QUALITY PLEDGE"

TINNERS TOOLS



P. S. & W HAND CRIMPERS

Crimps Pipe Quickly and in a Thorough Manner; Very Handy When Setting Up Stoves, Putting Up Conductor Pipe, etc., and for All Sheet Metal Work

ROTARY

Each

No. RHC Will Make a 1 inch Crimp on Metal as Heavy as 24 Gauge; All Working Parts Are Steel and Are Interchangeable; Length 9 inches; Weight Each 1¾ lbs **$5 50** 2 50

One in a Package

COMBINATION

Each

No. CPF—Combination Shear and Rotary Hand Crimper; Will Make a 1 inch Crimp on Metal as Heavy as 24 Gauge, and Will Cut Metal as Heavy as 18 Gauge; All Working Parts Are Steel and Are Interchangeable; Length 11½ inches, Weight Each 2¼ lbs **$9.00** 4 25

One in a Package

BERRIDGE PIPE SNIPS

For Cutting and Crimping Stove Pipe; Adapted for Round or Circular Work.

Each

No. 2B—2 inch Cast Steel Blade; Japanned Iron Handles; Length Over All 13 inches; Weight Each 2¼ lbs **$5.50**

Loose

NIPPERS

**DIAMOND EDGE*

REVERSIBLE

A Powerful Tool for Cutting Soft Wire, Music Wire, etc. Will Stand Hard Usage; Tool Steel Jaws are Dovetailed into Head and are **Reversible;** Drop Black Forged Handles are Hard, Polished Steel Cutters.

Nos.	DE6	DE8	DE10	DE12	DE14
Length, Inches	6	8	10	12	14
Weight per Dozen, Lbs	9	12	24	30	47
Each	**$1 60**	**1 80**	**2 00**	**2.30**	**2.50**

Per Pair in a Box

EXTRA CUTTERS

Nos	DEX6	DEX8	DEX10	DEX12	DEX14
For Nippers, No.	DE6	DE8	DE10	DE12	DE14
Weight per Pair, Ounces	2	2½	3	4	6
Per Pair	**$0.50**	**60**	**80**	**90**	**1 15**

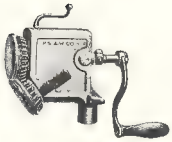
"DIAMOND EDGE IS A QUALITY PLEDGE"

TINNERS TOOLS

PECK, STOW & WILCOX

SETTING DOWN MACHINES

Used to Fasten the Bottoms on Vessels After the Edges Have Been Turned on the Burring Machine



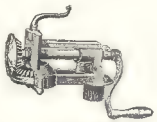
AMERICAN

Easiest to Operate; Faces Pass Over Seams Without Straining.

		Each
No. ASDS—Machine, With Standard; Weight 27 lbs	$19.50	9.75
No. ASD —Machine, Without Standard; Weight 16 lbs.	18.00	9.00

One in a Wood Box

Used With Both Stow's Encased and Stow's Columbian Machines.



STOW'S ENCASED

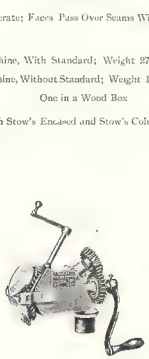
Gearings Are Fully Protected

		Each
No. ESDS—Machine, With Standard; Weight 24 lbs.	$20.50	9.75
No. ESD Machine, Without Standard; Weight 19 lbs.	18.00	9.00
✣ Extra Heavy Machine, With Standard; Wt. Each 22 lbs	22.00	11.00

One in a Wood Box

EXTRA PARTS

	Each
Upper Rolls	$6.00 3.00
Lower Rolls	6.00 3.00
Lower Journal Plates	1.00 .50



IMPROVED

HEAVY

Back Geared 2 to 1

The improvements on these Machines adapt them for setting down the Seams of different shaped vessels to better advantage than any other design. The inclined position of both upper and lower faces allows work to be held up or down, and seams to be started inward while setting down, thereby facilitating the operation of double seaming. An Adjustable Gauge is provided for Seams up to ⅜ in h

Can be fitted with Pulley for power at extra cost.

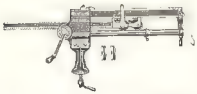
For No. 24 Iron and Lighter		For No. 18 Iron and Lighter	
	Each		Each
✣ No. 86—Setting Down Machine with Standard	Weight 31 lbs $13.40	✣ No. 87 Heavy Setting Down Machine with Standard	Wt 100 lbs. $21.80

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX

GROOVING MACHINES



With Square Supporting Bar. The Work is Always in Sight; Seams can be Formed Either on the Inside or Outside of Cylinder; may be Used on all Vessels not Less than 2 inches in Diameter; Adapted to Metal not Heavier than 22 Gauge

IMPROVED

With Three Grooving and One Flattening Rolls

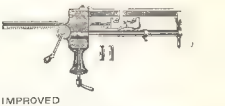
Each

✣ **No. 110**—Length 20 inches, Size of Grooving Rolls 1/8, 3/16 and 1/4 inch; Weight Each 95 lbs. **$28 00** 13 50

No. 120—Length 30 inches; Size of Grooving Rolls 3/16, 1/4 and 3/8 inch; Weight Each 110 lbs. **37 50** 18 00

One in a Wood Box

NOTE.—When the Rack is Thrown Back to the Standard, the Grooving Roll is Lifted from the Lower Bar and can Easily be Released to Change the Rolls.



✣ IMPROVED

With Following Roll

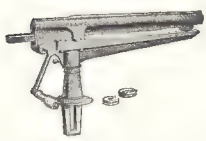
The Following Roll Attached is (Patent Attachment) is for Flattening the Seams; the Seam is Grooved and Flattened in one Operation; With Three Grooving and One Flattening Rolls.

Each

✣ **No. 210**—Length 30 inches; Size of Grooving Rolls 3/16, 1/4 and 1/4 inch; will Groove Work up to 20 inches; Weight Each 105 lbs **$35 50** 18 00

✣ **No. 220**—Length 40 inches, Size of Grooving Rolls 3/16, 1/4 and 3/8 inch; will Groove Work up to 30 inches; Weight Each 120 lbs **46 00** 23 00

One in a Wood Box



✣ STOW'S ENCASED GROOVERS

With Rotary Standard for Light Work; Adapted to Locking Seams on Metals not Heavier than 28 Gauge; Complete with Three Grooving Rolls, Sizes 1/8, 3/16 and 1/4 inch.

Each

✣ **No. 1**—Length 20 inches, Weight 75 lbs. **$25 50** 13.50

✣ **No. 2**—Length 17 inches; Weight 64 lbs. **21 00** 11 00

One in a Wood Box

✣ EXTRA PARTS FOR ABOVE Each

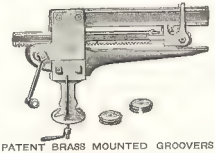
Standards ..... **$1 50** .75

Rollers (1/8, 3/16 or 1/4 inch) ..... **1 50** .75

Groover Ratchet, with Brass Mountings **4 50** 2.50

Groover Pinion ..... **1.00** .50

Loose



PATENT BRASS MOUNTED GROOVERS

With Steel Bar and Milled Horn; Adapted to Locking Seams on Metals up to 24 Gauge; Complete with Three Grooving Rolls, Sizes 1/8, 3/16 and 7-32 inch

Each

✣ **No. 01**—Length 20 inches; Weight 78 lbs. **$27 00** 13 50

✣ **No. 02**—Length 17 inches; Weight 69 lbs **22 00** 11 00

One in a Wood Box

✣ EXTRA PARTS FOR ABOVE Each

✣ **Standards** ..... **$1 00** .75

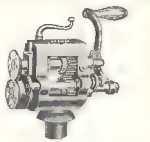
✣ **Rollers** (1/8, 3/16 or 7/32 inch) ..... **1 00** .75

✣ **Groover Ratchet,** with Brass Mount Ings; 10 lbs. **6 50** 3.25

✣ **Groover Ratchet,** without Brass Mountings **4.00** 2 25

Loose

ELBOW EDGING MACHINES



COLUMBIAN

Saves One Third of the Time Ordinarily Required in Putting Elbows Together; Forms Both Crease and Bead for Uniting the Two Sections

Each

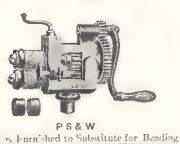
No. CEES Machine with Standard, Weight Each 28 lbs **$21 00** to 50

One in a Wood Box

Per Pair

✣ **Extra Rolls or Faces;** Weight per Pair 1 lb. **5.00** 2.50

STOVE PIPE CRIMPERS AND BEADERS



P S & W

Two Cutters are Furnished to Substitute for Beading Rolls when Crimping Only; is for 22 Gauge. Adjusted to Make Stock 22 Gauge.

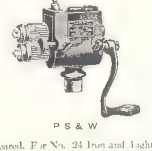
Each

No. 7—With Standard; Spiral Rolls; Weight 45 lbs $32 50 15 00

✣ **No 07**—With Standard, Straight Rolls, Weight 42 lbs **21 50** 10 00

✣ **No. 9**—With Foot Lever, Spiral Rolls; Weight 55 lbs **25 00** 14 00

One in a Wood Box



P S & W

No. 1 is Geared, For No. 24 Iron and Lighter. Drive Cut for Standard. Especially Adjusted for Leader Pipe and Stove Pipe.

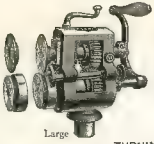
No. 597 With Standard; Spiral Beading and Crimping Rolls; Weight Each 48 lbs $23 00

Items Marked ✣ Not Carried in Stock, Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX

Small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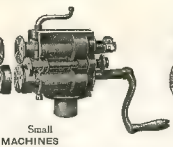
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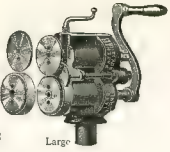

Large

TURNING MACHINES

Used in Preparing Vessels for Wiring and in Putting Stove Pipe Elbows Together; Each Size of Machine Has Two Sets of Faces, Adapting Them to the Sizes of Wire Most Commonly Used, Adapted to Metals Up to 24 Gauge.

STOW'S COLUMBIAN

		Each
No. CSTS—Small; With Standard; Weight Each 26 lbs	$21 00	10 00
No. CST —Small; Without Standard, Weight Each 16 lbs.	18 50	9 25
No. CLTS—Large; With Standard; Weight Each 30 lbs	22 00	10 25
No. CLT —Large; Without Standard; Weight Each 20 lbs.	19.50	9.50

One in a Wood Box

		Each
✣ **Extra Faces,** for Small or Large Machines	$2 00	1.00

STOW'S ENCASED

With Adjustable Faces and Interchangeable Parts; Gearings Are Fully Protected.

		Each
No. ESTS -Small, With Standard; Weight Each 24 lbs	$23 50	11.25
No. EST —Small; Without Standard; Weight Each 14 lbs.	21 00	10 50
No. ELTS—Large; With Standard; Weight Each 29 lbs	24.00	11 50
No. ELT —Large; Without Standard; Weight Each 19 lbs.	23.00	10 75

One in a Wood Box

		Each
✣ **Extra Faces** for Small or Large Machines	$2.10	1.00

BURRING MACHINES

Used for Turning Up Edges on Vessels, after which they are Finished on the Setting Down Machine.

STOW'S COLUMBIAN

Solid Frame; Faces Pass Over Seams, Without Straining.

Complete With Extra Upper Face

		Each
No. CSBS—Small; With Standard; Weight 21 lbs	$18 00	8 50
No. CSB —Small; Without Standard; Weight 11 lbs	15 50	7 75
No. CLBS—Large; With Standard; Weight 29 lbs	19 00	9 00
No. CLB —Large; Without Standard; Weight 16 lbs.	16 50	8 25

One in a Wood Box

✣ **Upper Face;** for Small Machine; Weight 2 ozs	2 00	1.00
✣ **Upper Face;** for Large Machine; Weight 3 ozs.	4.00	2.00

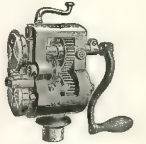
STOW'S ENCASED

Adjustable Boxes and Interchangeable Parts.
Gearings Are Fully Protected. **Complete With Extra Upper Face.**

		Each
No. ESBS—Small; With Standard; Weight 20 lbs	$21 00	10 00
No. ESB —Small, Without Standard; Weight 10 lbs.	18.50	9 25
No. ELBS—Larger; With Standard; Weight 24 lbs	22 00	10 50
No. ELB —Large; Without Standard; Weight 14 lbs.	19.50	9 75

One in a Wood Box

✣ **Upper Face;** for Small Machine; Weight 2 ozs	2 00	1 00
✣ **Upper Face;** for Large Machine; Wt. 3 ozs.	4.00	2.00



WIRING MACHINES

Used for Rolling the Sheet Metal Tightly Around the Wire After Its Seat Has Been Prepared by the Turning Machine; Adapted to Metals Up to 24 Gauge.

STOW'S COLUMBIAN

Solid Frame, Interchangeable Parts; Faces Pass Over Seams Without Straining.

		Each
No. CWS—Machine, With Standard; Weight 33 lbs.	$25 00	12.00
No. CW —Machine, Without Standard; Weight 23 lbs	23.50	11.25

One in a Wood Box

✣ **Upper or Lower Roll** With Arbor; Weight Each 2 lbs.	5.00	2.50

STOW'S ENCASED

Adjustable Boxes and Interchangeable Parts; Gearings are Fully Protected.

		Each
No. EWS—Machine, With Standard; Weight 20 lbs.	$29.00	14 00
No. EW—Machine, Without Standard, Weight 20 lbs.	26 50	13 25

One in a Wood Box

✣ **Upper or Lower Roll** With Arbor; Weight Each 2 lbs	5.00	2 50

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct From Factory

TINNERS TOOLS

PECK, STOW & WILCOX SQUARING SHEARS

Also Adapted for Cutting Leather, Cloth, Paper, Rubber, etc.

HULL'S ACME

With Top and Side Extension Tables

Fitted with Front and Back Gauges for Squaring, Stripping and Cutting at any Desired Angle Without First Marking the Sheets.

		Each
✣ No. **725**—25 inch Blade; will Cut 18 Gauge Iron; Weight Each 300 lbs.	$33 50	$ 47.00
✣ No. **730**—31 inch Blade; will Cut 18 Gauge Iron; Weight Each 425 lbs.	$39.00	50.00
✣ No. **731**—31 inch Blade; will Cut 14 Gauge Iron; Weight Each 660 lbs.	$153 50	80.00
✣ No. **736**—37 inch Blade; will Cut 18 Gauge Iron; Weight Each 570 lbs.	$153.50	80 00
✣ No. **740**—42 inch Blade; will Cut 16 Gauge Iron; Weight Each 900 lbs.	$338.00	134.00

✣ EXTRA BLADES

Nos.	Length Shear	For No.	Weight	Per Pair
725B	25	725	10 lbs.	$17 50
730B	31	730, 731	20 lbs.	20 00
736B	37	736	25 lbs.	25 00
740B	42	740	45 lbs.	37.00

Loose

HULL'S ACME

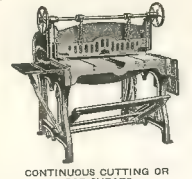
Fitted with Front and Back Gauges for Squaring, Stripping and Cutting at any Desired Angle without First Marking the Sheets.

		Each
✣ No. **0**—23 inch Blade; will Cut Tin; Weight Each 300 lbs.	$32 00	$35 00
✣ No. **1**—25 inch Blade; will Cut Tin; Weight Each 300 lbs.	$76 00	43 00
No. **2**—31 inch Blade; will Cut 18 Gauge Iron; Weight Each 425 lbs.	$84.00	48.00
✣ No. **2½**—37 inch Blade; will Cut 18 Gauge Iron; Weight Each 600 lbs.	$136 00	80 00
✣ No. **3**—42 inch Blade; will Cut 16 Gauge Iron; Weight Each 900 lbs.	$229.00	130 00
✣ No. **4**—52 inch Blade; will Cut 16 Gauge Iron; Weight Each 1200 lbs.	$334 00	190.00
✣ No. **5**—61 inch Blade; will Cut 18 Gauge Iron; Weight Each 1,650 lbs.	$422 00	240.00

✣ EXTRA BLADES

Nos.	Length For Shears	Weight	Per Pair
0B	23 in.	No. 0 10 lbs.	$16 00
1B	25 in.	No. 1 15 lbs.	18.50
2B	31 in	No. 2 20 lbs.	21.00
2½B	37 in	No. 2½ 37 lbs.	26 50
3B	42 in.	No. 3 45 lbs.	30 00
4B	52 in.	No. 4 60 lbs.	53.00
5B	61 in.	No. 5 70 lbs.	60 00

Loose



CONTINUOUS CUTTING OR GAP SHEARS

With Hold Down Attachment and Top and Side Extension Tables.

Sheet Metal of any Length can be Cut into Strips from ½ inch to 18 Inches Wide; the Gauges can be Accurately Adjusted; the Hold Down Attachment can be Operated from Either End of the Shear; Sheet Metal 30 inches Wide May be Cross Cut at any Desired Point; the Gauges at the Ends of the Blades Should be Removed to Cut Metal into Strips Longer than 30 inches; with Extension Treadle by which Increased Leverage is Obtained for Heavy Metals.

	Each
✣ No. **85**—**With Treadle;** 30 inch Blade; 15 inch Throat; will Cut 16 Gauge Iron; Weight Each 1,275 lbs.	$297 00 $150 00
✣ No. **88**—**With Treadle;** 37 inch Blade; 18 inch Throat; will Cut 16 Gauge Iron; Weight Each 1,450 lbs.	$358 50 175 00
✣ **185**—**For Power;** 30 inch Blade; 15 inch Throat; will Cut 16 Gauge Iron; Weight Each 1,700 lbs.	$345 50 225 00

NOTE. An Extra Charge will be Made for Boxing, when Required; Shipped from Cleveland, Ohio.

ROTARY SHEARS

Squaring Attachment

✣ WAUGH'S PATENT BEVEL, SQUARE AND CIRCULAR SHEARS

This Machine is Exceptionally Easy to Operate and Adjust; the Frame Bearing the Discs can be Removed and a Squaring Attachment Substituted by which Metals can be Slit, Cut Square or at any Desired Bevel.

FOR LIGHT MATERIAL
Operated by Hand

		Each
Will Cut any Square or Bevel Under 20 inches; can be Instantly Changed to Cut Circles; Adapted to Metals up to 22 Gauge.		
✣ No. **1**—Will Cut Circles 2¼ to 15 inches; Weight Each 60 lbs.	$58 00	$33.00
✣ No. **1A**—Same as No. 1 with Squaring Attachment; Weight Each 70 lbs.	$77 00	43.00
✣ No. **2**—Will Cut Circles 2¼ to 20 inches; Weight Each 70 lbs.	$67 00	38.00
✣ No. **2A**—Same as No 2 with Squaring Attachment; Weight Each 80 lbs.	$84 00	48.00

✣ EXTRA PARTS

For all Above Machines	Per Pair
✣ No. **1D**—Extra Discs	$ 3 00 $2.00
✣ No. **1C**—Extra Cutters; Weight 1 lb.	8 50 5.00
✣ No. **1CS**—Extra Cutters with Shafts.	14.50 8.00
	Each
✣ No. **1HC**—Head with Cutters; Weight Each 35 lbs.	$26 50 $15.00
✣ No. **1TP**—Tail Piece or Slide; Weight Each 20 lbs.	21.00 12.00

FOR HEAVY MATERIAL
Operated by Hand and Power

	Each
✣ No. **2**—For Both Hand and Power; will Cut Circles from 4½ to 40 Inches Diameter, from Metals up to 20 Gauge; Weight Each 225 lbs.	$132.00 $ 75.00
✣ No. **320A**—Same as No. 3 with 20 inch Bevel and Squaring Attachment; Weight Each 240 lbs.	$159.00 90.00
✣ No. **330A**—Same as No. 3 with 30 inch Bevel and Squaring Attachment; Weight Each 250 lbs.	$176 00 100 00
✣ No. **4**—For Power Only; will Cut Circles from 4 to 48 inches Diameter from Metals up to 18 Gauge; Weight Each 500 lbs.	$264.00 150.00

✣ EXTRA PARTS

	Per Pair
✣ No. **3C**—Cutters for No. 3; Weight 18 lbs.	$21 00 $12.00
✣ No. **4C**—Cutters for No. 4; Weight 24 lbs.	$26.50 15.00
✣ No. **4SG**—Slitting Gauge for No 4 to be Used instead of Circle Head; Weight Each 18 lbs.	$26.50 15.00

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX

BENCH PLATES

Cast Iron, Polished; with Socket Holes to Receive All Stakes, Swedges, Formers, etc.

	Each
No. 2—30x8 inches; Weight 37 lbs....	$3.00
	5 10
No. 1—37x8 inches; Weight 50 lbs....	5 00
	8 80
✢ **No. 0**—48x12 inches; Weight 94 lbs...	9.00
	15.00

Loose

RAISING HAMMERS

With Hickory Handle

For All Kinds of Raised Work; Cast Steel, Japanned; Polished Faces.

	Each
✢ **No. 8RH**—1¼ pounds; 6⅝x1¾ inch Head.....	$1 80 0.85
No. 9RH—2¼ pounds; 6⅜x1¾ inch Head.....	2.80 1 35
No. 2RH—3¾ pounds; 7⅝x2⅛ inch Head.....	3.80 1.85
✢ **No. 1RH**—5 pounds; 7¾x2⅜ inch Head.....	4 80 2 35

Per Dozen

✢ **Extra Handles** for Raising Hammers; Hickory, Plain Finish..... 2.30 1 25

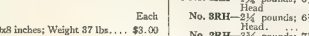
Loose

SCRATCH AWLS

Per Dozen

No. PS4—Solid Steel, with Ring; Twisted Shank; Length 8½ inches; Weight per Dozen 1 lb..... $3.40 1.25

One Dozen in a Box



WIRE CHISELS

For Cutting Wire and Similar Small Work; Made of Steel; Length 5 inches.

Width, Inch	⅜	7/16	½	9/16	⅝	✢¾	1
Each	$0 08	09	.10	.11	12	.13	14
	.08	.10	.10	.12	12	13	16
Width, Inches	✢1⅛	1¼	✢1⅜	1½	✢1⅝	✢2	
Each	.15	17	19	20	.24	.29	
	16	18	20	20	24	.30	

One Dozen in a Box; Average Weight Each ½ to 2 ozs.

LANTERN CHISELS

For Cutting Holes in Any Kind of Circular Work, Like Eave Troughs etc.; Cast Steel, Japanned, Polished Point.

	Each
½ inch Wide, 5¾ inches Long; Weight Each 3 ozs.....	$0.12 .12
1 inch Wide, 6¾ inches Long; Weight Each 6 ozs.....	.20 .20

Loose

Full Size of Holes

Nos. PS0 PS1 PS2 PS3 PS4 PS5 PS6 PS7 PS8

SOLID PUNCHES

Nos	PS0	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8
Size in 32nds	9	8	7	6	5	4	3	2	1
Wt. Doz., Lbs.	2	1⅞	1¾	1¾	1¾	1⅝	1½	1	⅝

Per Dozen

All Sizes; Cast Steel, Japanned 4½ inches Long $1.80 1.44

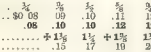
One Dozen in a Box

PRICK PUNCHES

Per Dozen

No. PSP—Cast Steel, Japanned; Square Shank; Length 5 inches, Weight per Dozen 1¼ lbs..... $1.80 1 44

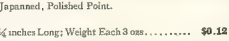
One Dozen in a Box



HOLLOW PUNCHES

Japanned; Polished Edges

Average Length 5½ inches



Forged Steel

Sizes from ¾ inch to 1½ inches, Inclusive

Size, Inches	¾	7/8	1	1⅛	1¼	1⅜	1½
Weight Each, Lbs	⅞	1	1⅛	1¼	1⅜	1½	1⅝
Each	$0 25	.32	.38	.50	.63	.75	.88
	.36	.46	.56	.72	.90	1.10	1 30

Wrought Shank

Sizes 1¾ and 2 inches

Size, Inches	1¾	2
Weight Each, Lbs	1⅞	2⅛
Each	1 00	1.13
	1 50	1 60

Loose

Full Size of Holes

Nos. PS00 PS0 PS1 PS2 PS3 PS4 PS5 PS6 PS7 PS8

RIVET SETS AND HEADERS

Best Cast Steel; Gun Metal Finish; Perfectly Tempered

Nos	PS00	PS0	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8
For Iron Rivets, Lbs	14	10 &12	8	6	4 &5	2½ & 3	1¾ & 2	1½	1¼	10 & 12
For Cop. Rivets, Nos.		8	6	7	8	9	10 & 11	12	13	14
Wt. Each, Ozs.	14	12	9	8	7	6	5	4	4	3
Each	$0.75	.75	.63	.63	.50	.50	.37	.37	.32	.32
	.90	.90	.80	.80	.60	.60	.50	.50	.36	.36

Half Dozen in a Box

HAND GROOVERS

Forged Steel, Natural Finish; Round Shank

Nos	00	0	1	2	3
Groove, In.	1/32	1/16	3/32	1/8	5/32
Wt. Each, Lbs	1⅝	1⅝	1⅝	1⅝	1
Each	$0 75	.75	.63	.63	.50
	1.10	1.10	1.00	1.00	.80
Nos	4	5	✢6	✢7	✢8
Groove, In.	3/16	7/32	1/4	9/32	5/16
Wt. Each, Lbs	7/8	3/4	5/8	1/2	3/8
Each	$0 50	.37	.37	.25	.20
	.80	.80	.80	.36	.36

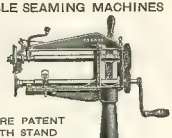
Loose

Items Marked ✢ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX

DOUBLE SEAMING MACHINES



MOORE PATENT
WITH STAND

For General Purposes Adapted to Metals up to No. 20 Gauge. The Only Machine that will Double Seam Coffee Pots. Each

✢ **No. 1**—For Heavy Metal; Length 15 inches; Diameter of Face 4½ inches; Weight Each 50 lbs..... **$30 50** 21.00

No. 2—For Common Work; Length 13 inches; Diameter of Face 4 inches; Weight Each 45 lbs **36 00** 19.00

✢ **No. 3**—For Coffee Pots; Length 10 inches; Diameter of Face 2¾ inches; **30.00** 16.00

One in a Wood Box

✢ EXTRA PARTS Each

Faces; Weight Each 2 lbs . **$4 80** 2 50

Stands; Weight Each 10 lbs . **1.90** 1 00

NOTE. -No. 2 is the Best Size for the Average Shop; it will Take Wash Boilers and all Kinds of Shallow Vessels.

This Machine is Gradually Superseding all Other Makes on Account of its Great Strength and Durability; Nos. 13 and 14 Have a Handle at Each End

CHAMPION

Gauge is Adjustable to Form Locks from 1/8 to ¼ inch Wide; the Fold is Completed Against a Round Steel Rod, Insuring a Lock of Uniform Width the Entire Length; this Rod also Protects the Edge of the Frame and can be Replaced at Small Expense. Each

No. 11—Length 33 inches; Adapted to Metals up-to 26 Gauge; Weight Each 100 lbs. **$24.00** 12 00

✢ **No. 13**—Length 42 inches; Adapted to Metals up to 24 Gauge; Weight Each 20 lbs **59 00** 30 00

✢ **No. 14**—Length 42 inches; Adapted to Metals up to 22 Gauge; Weight Each 200 lbs..... **63.00** 32.00

One in a Wood Box

TIN FOLDING MACHINES

P. S. & W. CO.'S, NEW BAR FOLDERS

Will Turn Locks from 1/8 to 1 inch Wide; Adapted to Metals up to 22 Gauge; the Wedge which Raises and Lowers the Wing is Operated by a Rack and Pinion; the Gauge is Operated by a Drop Lever and its Movement is Instantaneous; it is Adjustable in Fractions of Inches; the Folding Bar is Adjusted by a Socket Wrench. Each

✢ **No. 252**—Length 20 inches; Weight Each 90 lbs **$80.00** $30 00

✢ **No. 254**—Length 30 inches; Weight Each 170 lbs **80.00** 40 00

One in a Wood Box

✢ WITH SPRING ATTACHMENT

To Relieve Strain in Continuous Work Each

✢ **No. 252½**—Length 20 inches; Weight Each 92 lbs..... **72 00** $36 00

✢ **No. 254½**—Length 30 Inches; Weight Each 172 lbs..... **91.00** 46 00

SHEET IRON FOLDERS

This Machine will Turn Locks on any Length of Sheet; for this Purpose a Round Rod is Furnished and is so Placed that the Sheet is put into the Machine over it; when the Folding Bar is Turned a Slight Bend is Made the Entire Length of Sheet; the Operation Being Repeated till the Lock is Finished.

WRIGHT IMPROVED

Gauge is Adjustable to Form Locks 1/8, 3/16, ¼ and 5/16 inch Wide; Steel Strips are Furnished to Use Under the Plate for Turning Locks Wider than the Plate. Each

No. 12—Length 30 inches; Adapted to Metals up to 24 Gauge; Weight Each 75 lbs.....**$38.00** 14.00

✢ **No. 17**—Length 62 inches; Adapted to Metals up to 22 Gauge; Weight Each 175 lbs..... **109 00** 55 00

One in a Wood Box

✢ ADJUSTABLE BAR FOLDERS STOW'S PATENT

Will Turn Locks from 1/8 to 1 inch Wide; Nos. 152 and 154 are Adapted to Metals up to 22 Gauge; No. 352 will Turn Locks on 20 Gauge Metals.

The Gauge is Moved by a Hand Wheel in the Center and Fastened by a Set Screw at Left End of Frame; the Movement of the Gauge is Instantaneous; It is Adjustable in Fractions of Inches. Each

✢ **No. 152**—Length 20 inches; Weight 80 lbs..... **$53 00** 27.00

✢ **No. 154**—Length 30 inches; Weight 155 lbs. **74.00** 37.00

✢ **No. 352**—Extra Heavy; Length 22 inches; Weight 225 lbs . **248.00** 125 00

One in a Wood Box

This Machine is Intended for Ordinary Work only; it Answers all General Purposes in the Average Shop.

WRIGHT PATENT

Gauge is Adjustable to Form Locks 1/8 and 1/4 inch Wide. Each

✢ **No. 00**—Length 62 inches; Adapted to Metals up to 22 Gauge; Weight Each 140 lbs..... **$39.00** 50 00

No. 0—Length 42 inches; Adapted to Metals up to 22 Gauge; Weight Each 100 lbs..... **19.00** 20 00

✢ **No. 1** Length 30 inches; Adapted to Metals up to 24 Gauge; Weight Each 75 lbs..... **24.00** 12.00

One in a Wood Box

SHEET IRON FOLDERS

STOW'S IMPROVED

These Machines can Only be Used in Turning Flat Sheets.

Iron Bottoms; Will Turn Locks from 1/8 to 3/16 inch Wide; the Gauge is Moved by Sliding Endwise and is Always on a Line Parallel with the Edge of the Folding Plate. Each

No. 10—Length 30 inches; Adapted to Metals up to 26 Gauge; Weight Each 88 lbs.. ..... **$20 00** 10.00

✢ **No. 15**—Length 42 inches; Adapted to Metals up to 26 Gauge; Weight Each 175 lbs..... **36 00** 18 00

✢ **No. 20**—Length 60 inches; Adapted to Metals up to 24 Gauge; Weight Each 300 lbs. **50 00** 25.00

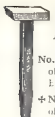
One in a Wood Box

Items Marked ✢ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX STAKES

Wrought Iron with Steel Faces



SQUARE HEAD

Adapted for all Square Work.

Each

No. CS—Common Square; Size of Face 4¾x8¾ in.; Weight Each 11 lbs. **$5.10** 3 00

✣No. SS Small Square; Size of Face 2⅝x4½ in.; Weight Each 3 lbs. **3 50** 2 00

✣No. LS—Large Square; Size of Face 5½x8½ in., Weight Each 14 lbs . . . **13 00** 7 00

Loose

ROUND HEAD

Used for Light Work, Riveting Handles on Covers, etc.

Each

No RH Diameter of Head 3⅜ inches; Length Over All 12 inches; Weight Each about 3 lbs . . . **$2 10** 1 25

Loose

HATCHET

For Forming Seams on the Edges of a Sheet; Generally Used where Folder is Inconvenient

Nos.	✣1H	2H	3H	4H	5H	✣6H
Bust., In	1½	1¼	1	1	¾	⅞
Weight, Lbs	1¼	¾	¾	½	¼	⅜
Each	$5 00	4 50	4 00	3 50	2 25	3 75
	8 40	**7 20**	**6 00**	**4 60**	**3 90**	**3 00**

Loose

With Horn

The Horn is Used for Forming Large Cylinders, etc

With One Round and One Square Arm

For Forming Smallest Tubes, Rings, etc

With Both Arms Round and Tapering

For Forming Small Cylinders, Tubes, Rings, etc

CREASING

Each

No CH Length of Horn 10¼ in., of Flat Part 6½ in.; Weight Each 12½ lbs. **$7 00** 4 50

Loose

NEEDLE CASE

Each

No. NC Length of Horn 10¼ in., of Flat Part 8½ in.; Weight Each 4 lbs. **$3 90** 2 50

Loose

CANDLE MOULD

Each

No. CM Length of Small End 18 in., of Horn 8½ in.; Weight Each 6 lbs. **$4 60** 3 25

Loose

One Flat Arm and One Round Tapering Arm

For Round, Square or Beveled Work

DOUBLE SEAMING

Each

With Ball Arms, Round, Flat Face, Beaks, Etc.

✣No. 1D Length of Large End 12 in.; Weight Each 34 lbs . . . **$15.00** 9.00

For Small Vessels, Cones, etc

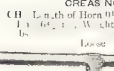
✣No. 2D Length of Each End 11 in.; Weight Each 20 lbs . . . **13 50** 8 00

Loose

BEAKHORN

Nos.	✣1BK	2BK	✣4BK
Square Arm, In	20	19	18
Round Arm, In	18	17½	16½
Weight Each, Lbs.	45	40	32
Each	$15.00	13.25	10.50
	25.00	**22 50**	**17 00**

Loose



For Locking Seams on Conductor Pipe

With Both Arms Round

CONDUCTOR

Each

No. 1C—Length of Large End 15 in., of Small End 11½ in.; Weight Each 45 lbs. **$8 80** 4 00

✣No. 2C Length of Large End 14 in., of Small End 10 in., Weight Each 25 lbs . . . **5.10** 3.00

Loose

✣UNIVERSAL STAKE HOLDERS AND STAKES

Stakes Can be Used in any Desired Position, Without Marring the Bench

Per Set

✣Complete Set as Listed Below with Stake Holder, Weight per Set 139 lbs. **$70.00** 37 50

One Set in a Wood Box

✣STAKES FOR ABOVE SETS

Each

✣Stake Holder; Weight 21 lbs	**$ 8.50**	4 50
✣Beakhorn; Weight 47 lbs. .	**21 00**	11 00
✣Blowhorn; Weight 14 lbs. .	**7.10**	3 75
✣Creasing, Weight 5 lbs . .	**2.60**	1 40
✣Dbl. Seaming, Weight 9 lbs	**12.50**	6 50
✣Conductor; Weight 16 lbs .	**7.60**	4 00
✣Candle Mould; Weight 17 lbs	**4.30**	2 25
✣Needle Case; Weight 11 lbs .	**3 30**	1 75

✣EXTRA PARTS

✣Large End for Beakhorn Weight 21 lbs	**$11.50**	6.00
✣Small End for Beakhorn, Weight 10 lbs	**9.50**	5.00
✣Flat End for Conductor, Weight 16 lbs	**4.30**	2.25
✣Round End for Conductor; Weight 10 lbs. . . .	**3.30**	1.75
✣New and Bolt for Stakeholder Weight 9 pounds . .	**1.00**	.50
✣Nut for Stakeholder; Wt. 10 ozs.	**.60**	.30

Loose

BLOWHORN

With One Long Tapering Arm and One Over, Faced Taperin, Arm

The Long Tapering Arm for Forming Large Cylinders and Similar Articles; the Short Arm for Forming Covers, etc.

Each

No. CBH Length of Small End 7½ in., of Large End 9 in., Weight Each 19 lbs . . . **$8 40** 5 00

Loose

DOUBLE SEAMING

With Four Different Shaped Heads

Per Set

No **DSS**—Set Consists of a 22x4 in. Square Arm, One 6 in. Round Head with Flat Face, One 3⅝x8 in. Oblong Head with Round Face, One 5x1¾ in. Square Head with Flat Face and One 9½x3 in. Oblong Head with Oval Face; Weight per Set 85 lbs. . **$15 00** 9.00

One Set in a Wood Box

✣EXTRA HEADS

Each

✣For No. DSS Double Seaming Stake . **$2.60** 1.60

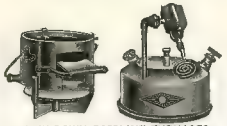
Heads Weigh from 11 to 18 lbs.

In Ordering Extra Heads be sure to Specify the Style Wanted.

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

GASOLINE SOLDERING FURNACES

*NORLEIGH DIAMOND



LOW DOWN GASOLINE FURNACES

Heavy Galvanized Steel Tank, Seamless Except Around Bottom, which is Strongly Soldered and Protected by Malleable Iron Ring; Never Leak Brass Pump, with Cork Check and Positive Closing Needle Valve; Intensely Hot Flame, Free from Smoke, will Quickly Heat Heavy Irons and a Pot of Metal at the Same Time; The Top Section May be Removed, and the Open Flame Used as a Torch for Brazing, Melting Out Lead Joints, Thawing Frozen Pipe, etc.

Each

No. NDF5—**Capacity 5 pints;** Height 12 inches; Diameter of Base 8½ inches; Weight Each 12½ lbs... .... **$10 50**

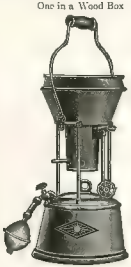
No. NDF7—**Capacity 7 pints;** Height 12½ inches; Diameter of Base 10 inches; Weight Each 16½ lbs.. .. . **$14.00**

One in a Wood Box

WITH PUMP

Each

No. NDFC—Capacity 1 Gallon; Heavy Galvanized Steel Tank; Cast Iron Metal Pot and Combination Shield for Holding Metal Pot and Soldering Irons; Never Leak Pump, with Needle Valve; Brass Nuts, Plug and Fittings; Extra Heavy Pipe Coils; Height 20 inches; Diameter of Base 8½ inches; Weight Each 19 lbs **$9 80**



WITH BULB

Each

No. NDFB—Capacity 1 Gallon; Heavy Galvanized Steel Tank; Removable Hood; Brass Nuts, Plug and Fittings; Extra Heavy Pipe Coils; Height 17 inches; Diameter of Base 8½ inches; this is a Good General Purpose Furnace and will Give Good Satisfaction; Weight Each 14 lbs..... ... . **$8.70**

One in a Wood Box

GEM (No. 3)

The Heat is Distributed the Full Length of Coppers by a 4 inch Burner; Gas is Generated Without Smoke or Odor; will Take all Sizes of Coppers; Copper Rest Plate is but 5 inches from Workman's Bench. .

Each

No. GMF —Capacity 3 Qts; **Galvanized Steel** Reservoir, with Regulating Valve; 21x7 inch Sheet Steel Base, Black Enameled; Improved Slotted Cast Iron Burner; Height Over All 14½ inches; Weight Each 20 lbs. **$15.50**

One in a Crate

TINNERS STOVES

For Charcoal

The Fire Pot is Constructed so that the Ashes Fall into a Pan Beneath the Coal, Keeping the Fire Clear and the Draft Good; Light and Easy to Carry.

Each

No. P2—Sheet Iron Body, Japanned; Cast Iron Base, Top, Legs and Door; Heavy Wrought Iron Bail; Height 15¼ inches; Diameter 8 inches; Weight per Dozen 180 lbs **$4 60**

Loose

TINNERS TOOLS

P. S. & W. MANDREL STAKES

With Oval Face on One Side, Flat Face on Reverse Side; Lengths Given Do Not Include Head.

		Each
✣ No. 00M	—60 in.; Wt. 128 lbs.	$17.00
✣ No. 0M	—40 in.; Wt. 87 lbs.	10.50
✣ No. 1M	—34 in.; Wt. 44 lbs.	5.40
✣ No. 2M	—30 in.; Wt. 37 lbs.	6.80
✣ No. 3M	—27 in.; Wt. 31 lbs.	5.10

Loose 3.00 2.50 2.00 1.75 3.00

P. S. & W. HOLLOW MANDRELS

Secured to Bench in Such a Manner that it Can be Swung to Any Desired Position and Fastened.

Nos.	11HM	✣ 12HM	✣ 13HM
Length, Inches	40	42	48
Oval Part, Inches	32	32	36
Flat Part, Inches	8	9½	15
Weight Each, Lbs.	46	190	300
Each	$5.50	16.00	25.00
	9.00	27.50	32.00

Each

✣ No. HMF Hollow Mandrel Fasteners Loose $1.10 .60

ADAMS STOVE PIPE MANDRELS

With Heavy Band Clamp for Attaching to Bench. This Mandrel will be Found Very Handy, Especially in Small Shops.

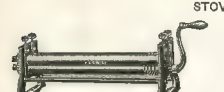
Each

No. A—Cast Iron, Polished Face; Length Over All 36 inches; Width 4½ inches; Weight Each 40 lbs. $7.00

No. A2—Unpolished, Otherwise Same as Above; Weight Each 40 lbs. 5.50

One in a Wood Box

STOVE AND TIN PIPE FORMING MACHINES



STOW'S PATENT

Turned Steel Rolls, Smooth and Free From Imperfections; Cast Iron Frame, Japanned.

FOR STOVE PIPE

Nos.	1	2
Diam. Rolls, Inches	2	1¾
Length Rolls, Inches	30	30
Weight Each, Lbs.	130	105
Each	$19.00	18.00
	33.50	32.00

✣ FOR TIN PIPE

Nos.	31	32	35	36
Diam. Rolls, Inches	1½	1¾	1	2
Length Rolls, Inches	20	16	12	12
Weight Each, Lbs	54	46	34	42
Each	$10.00	9.00	12.00	16.00
	16.50	15.00	20.00	26.50

✣ FOR CANS

Nos.	0	0½
Diam. Rolls, Inches	2	2
Length Rolls, Inches	37	40
Weight Each, Lbs.	150	160
Each	$24.00	26.00
	30.00	33.00

One in a Wood Box

With Compensating Gears

Gears Run Smoothly, Regardless of Thickness of Metal, Without Danger of Slipping or Breaking; Cylinders Can be Formed from DXXX Tin as Small as 2½ inches, and from X Tin as Small as 2¼ inches Diameter.

FOR STOVE PIPE

Nos.	11	12	✣ 13
Diam. Rolls, Inches	1¾	2	2
Length Rolls, Inches	30	30	37
Weight Each, Lbs.	100	123	140
Each	$18.00	20.00	26.00
	28.00	31.50	41.00

✣ FOR TIN PIPE

Nos.	21	22
Diam. Rolls, Inches	1¾	1¾
Length Rolls, Inches	16	20
Weight Each, Lbs.	42	53
Each	$ 9.00	10.00
	15.00	16.00

One in a Wood Box

PATENT SLIP ROLL FORMERS

With Compensating Gears

Easily Adjusted; Can be Quickly Set to Form Cylinders of Any Desired Size; Small Work Can be Taken from the End After it is Formed

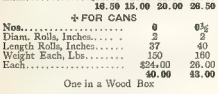
FOR STOVE PIPE

Nos.	✣ 0100	100	✣ 200
Diam. Rolls, Inches	2	2	1¾
Length Rolls, Inches	37	30	30
Weight Each, Lbs.	140	125	116
Each	$30.00	21.00	19.00
	47 00	33.00	30.00

✣ FOR TIN PIPE

Nos.	101	102
Diam. Rolls, Inches	1¾	1¾
Length Rolls, Inches	20	16
Weight Each, Lbs.	50	45
Each	$11.00	10.00
	17.50	16.00

One in a Wood Box



PATENT SLIP ROLL FORMERS

Back Geared; Compensating Gears

For Heavy Work; Two Revolutions of the Crank to One Revolution of the Rolls; Small Work Can be Taken from the End After it is Formed.

Each

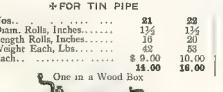
✣ No. 01—Diameter of Rolls 2 inches; Length 30 inches; Weight Each 164 lbs. $55.00 35.00

NOTE—Above Machine, with Legs; Additional, Each 11.00 7.00

One in a Box

✣ Pulley—12x4 inches to Make Power Machine of Above Former; Weight Each 15 lbs. 12.50 8.00

Loose



BEADING MACHINES—STOW'S PATENT

With Interchangeable Parts

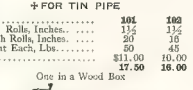
Has Guide Rest in Front on which the Article Rests While the Bead is Formed; Each Machine is Equipped with 3 Pairs of Rollers and Rotary Stand; Will Bead 20 Gauge Iron.

Nos.	✣ 1	✣ 2	✣ 3
Length, Inches	13	10	7¼
Ogee Bead, Inches	1	1	⅞
Triple Bead, Inches	1	1	⅞
Single Bead, Inches	¾	¾	¾
Weight Each, Lbs.	117	110	81
Each	$32.25	31.25	26.25
	61.00	59.00	50.00

One in a Box

✣ EXTRA PARTS

✣ For Machines, Nos.	1	2	3
✣ Rollers, per Pair	$6.60	6.60	5.80
✣ Crimping Rolls, per Pair	11.50	11.50	9.50
✣ Stands, Each	2.50	2.50	2.50
✣ Guide Rests, Each	3.50	3.50	2.50
✣ Cranks, Each	1.00	1.00	1.00
✣ Crank Screws, Each	1.00	1.00	1.00



BEADING MACHINES—STOW'S PATENT

With Interchangeable Parts

Will Bead Material up to and Including 26 Gauge.

Each

No. 4—Length 6 inches; Size of Beads: Ogee ¾ inch; Triple ⅝ inch; Triple Coffee Pot ⅝ inch; Single ⅞ inch; Weight Each 35 lbs $37.50 19.75

✣ No. 5—Length 4 inches; For Tin; Size of Beads: Astragal ⅝ inch; Ogee ⅝ inch; Triple Coffee Pot ⅝ inch; Triple Coffee Pot, Fine, ⅝ inch; Single Bead ¾ inch; Weight Each 20 lbs. 32.00 16.75

✣ EXTRA PARTS

✣ For Machines, Nos.	4	5
✣ Rollers, per Pair	$5.90	2.50
✣ Crimping Rolls, per pair	6.60	3.90
✣ Stands, Each	1.90	1.90
✣ Guide Rests, Each	1.50	1.50
✣ Cap and Crank Screw, Each	3.90	3.90

Loose.

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX

ROOFING FOLDERS

Solid Oak, Natural Finish; Steel Edge; Iron Carrying Handle. For Flat Seam Tin Roofing

ADJUSTABLE, WITH GAUGE

	Each
✣ No. 1RFA—Adjustable to 20 or 30 inches; Weight Each 15 lbs.	$10.50 6.00

IMPROVED, WITH GAUGE

✣ No. 1RF20 —20 inches Long; Weight Each 11 lbs	6 20	3 50
No. 1RF30 —30 inches Long; Weight Each 15 lbs	9 00	5 00

COMMON, WITHOUT GAUGE

✣ No. RF14—14 inches Long; Weight Each 7 lbs	4 40	2 50
✣ No. RF20—20 inches Long; Weight Each 9 lbs	4 40	2 50
No. RF30 —30 inches Long; Weight Each 12 lbs	6 20	3 50

Loose

✣ EXTRA STEEL BLADES

For Roofing Folders	Each
✣ For 20 inch Folder; Weight Each 2½ lbs	$1 00
✣ For 30 inch Folder; Weight Each 3¾ lbs	2 70 1.50

Loose

Cut Shows One Pair. A Set Consists of Two Pairs.

ROOFING DOUBLE SEAMERS

Used in Places where Seaming Tongs would be inconvenient.

Two Pairs to Match, Make One Set; Cast Steel, Japanned.

	Per Set of Two Pairs
No. RDS—Size of Faces 1x1¼ inches and 1¼x1¼ inches; Weight per Set 19 lbs	$3.10 1 75

Loose

Single Pairs One Half Above Price

Cut Shows One Pair. A Set Consists of Two Pairs

COMMON ROOFING TONGS

Used to Turn Seams and to Draw the Two Strips of Tin Together Before Cleating. Each Size Turns but One Size of Seam, Made of Steel, Japanned; 24 inches Long, 17 inch Clamps.

	Per Pair
No. RT1 Turns 1 inch Seams	$5.30 3 00
No. RT1½—Turns 1½ inch Seams	5.30 3 00
No. RT1¼—Turns 1¼ inch Seams	5.30 3 00

Average Weight per Pair 9 lbs.

Loose

STOW'S IMPROVED ROOFING TONGS

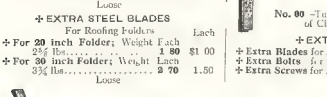
These Tongs are Adjustable; a Single Pair will Turn Five Different Widths of Seams; they are Not, therefore, Sold in Sets; Made of Steel, Japanned.

	Per Pair
No. 00 —Turns Seams ½, ¾, 1, 1¼ and 1½ inches; Length 25½ inches; Length of Clamps 18½ inches; Weight per Pair 8½ lbs	$7.00 4 00

✣ EXTRA PARTS FOR STOW'S IMPROVED ROOFING TONGS

	Each	
✣ Extra Blades for Above; Weight Each 2¼ lbs	$2.50	1 50
✣ Extra Bolts for Above; Weight Each 2 ozs	.40	.25
✣ Extra Screws for Above; Weight Each 1 oz	.26	.15

Loose



REESE PATENT ROOFING TONGS

With Adjustable and Removable Gauge. Suitable for Edging and Bending any Kind of Sheet Metal up to 22 Gauge; Steel Clamps, Japanned; Adjusted by Thumb Screw and Sliding Gauge.

	Per Pair
No. 6—Adjustable to Turn Edges from ½ to 10 inches; Length 30 inches; Width of Clamps 14 inches; Weight per Pair 11¾ lbs	$15.50

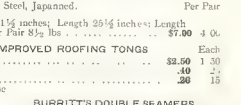
Loose

GUTTER TONGS

For Turning Up Gutter, etc. Steel Clamps, Malleable Iron Handles, Japanned; Suitable for Iron or Steel up to 22 Gauge.

	Per Pair
No. GT—Length 37 inches; Width of Clamps 13 inches; Weight per pair 10 lbs	$8.80 5.00

Loose



BURRITT'S DOUBLE SEAMERS

Japanned Malleable Iron, Hollow Tubed Iron Handles and Malleable D Handle. Will Double Seam Hips and Ridges, can be used by either Hand or Foot Power.

When Shipped they are fitted for IC Tin.

	Per Set 2 Pairs
No. BRDSC With Gauge; to follow 1 and 1¼ inch Tongs, forming ¾ inch Locks. Length Over all 30 inches; Width 15 inches; Size of Blade ¾ to 2 in.; Weight each 21 lbs.	$30.00 36.50
No. BRDSW With Wide Gauge; to follow 1¼ and 1½ inch Tongs, forming 1 inch Locks. Length Over all 29½ inches. Width 15 inches; Size of Blade 3½ inches; Weight Each 40 lbs	$36.00 36 50

GUTTER BEADERS

For Turning Beads on Eave Trough, Miters, etc; Iron Bottom, with Inclosed Steel Rod.

		Each
✣ No. 12	—Length 15 inches; Weight Each 6 lbs	$6 00 3 50
✣ No. 11	Length 20 inches, Weight Each 11 lbs	6 70 4 00
No. 02½B	—Length 30 inches; Diameter of Rod ⅛ inch; Weight Each 18 lbs	10 00 6.00
No. 02⅝B	—Length 30 inches; Diameter of Rod ⅝ inch; Weight Each 18½ lbs	10 00 6 00
✣ No. 01	—Length 42 inches; Weight Each 25 lbs	15 00 9 00
✣ No. A1	—Length 60 inches; Weight Each 90 lbs	33 50 20 00
✣ No. A2	—Length 96 inches; Weight Each 160 lbs	50 00 30 00
✣ No. A3	—Length 120 inches; Weight Each 200 lbs.	66 00 40 00

Diameter of Rod Wanted Must Invariably be Given, or Orders Cannot be Filled.

One in a Wood Box

GUTTER RODS

		Each
For Gutter Beaders Shown at the Left; Made of Steel		
✣ No. 12	—Length 15 inches, Diameter ⅜ to ⅝ inch; Average Weight Each 1½ lbs	$3 00 1 75
✣ No. 11	—Length 20 inches, Diameter ⅜ to ⅝ inch; Average Weight Each 1¾ lbs	3 40 2 00
No. 02½	—Length 30 inches, Diameter ⅛ inch; Weight Each 4½ lbs	5 00 3 00
✣ No. 02⅝	—Length 30 inches, Diameter ⅝ inch; Weight Each 11 lbs	5 00 3.00
✣ No. 01	—Length 42 inches, Diameter ⅜ to ⅝ inch; Average Weight Each 8 lbs	7 00 4.50
✣ No. A1	—Length 60 inches, Diameter ⅜ to ⅝ inch; Average Weight Each 14 lbs	13 40 8 00
✣ No. A2	—Length 96 inches, Diameter ⅜ to ⅝ inch; Average Weight Each 22 lbs	27 00 16 00
✣ No. A3	—Length 120 inches, Diameter ⅜ to 1 inch; Average Weight Each 50 lbs	33 50 20 00

Diameter of Rod Wanted Must Invariably be Given, or Orders Cannot be Filled.

Loose

Items Marked ✣ Not Carried in Stock, Can Only be Furnished by Shipping Direct from Factory

TINNERS TOOLS

PECK, STOW & WILCOX

CONTINUOUS ROLLING CUTTER SHEARS

In these Shears the Power Travels with the Cutter; they are Operated by a Plain Lever Engaging in a Rack and Cutting with the Forward Roll of the Disc; the Disc is Reversable and can be Changed to 6 Different Positions; the Straight Cutter Blade is Double Edged, the Motion of the Disc is about 1-3 of its Circumference. Pieces may be Cut out of Sheet Metal without Leaving Cross Marks.

		Each
✣ **No. 11**	Will Cut 20 Gauge Iron, Length 12½ inches; Weight Each 4 lbs.	$8.35
No. 12—	Will Cut 16 Gauge Iron; Length 19 inches; Weight Each 11 lbs.	12 55

Each 7 50

✣ EXTRA PARTS

For Shears, Nos.	11 Each	12 Each
✣ **Bed, Complete** (Drilled and Fitted)	$3 00	1 75	5 00	3 00
✣ **Disc**	2 60	1 50	4 20	2 50
✣ **Lower Blades**	.90	.50	1 35	.75
✣ **Lever, Complete**	1 30	.75	2 10	1 25
✣ **Disc Bolt, Complete**	1 80	1 00	2 10	1 25
✣ **Blade Clamp Bolts**	.32	.20	.32	.20

Loose

P. S. & W. COMBINED SHEARS AND PUNCHES

This Machine is for Both Cutting and Punching Metal; will Cut ⅛ inch Iron, and 8-16 and ¼ inch Narrow Bars.

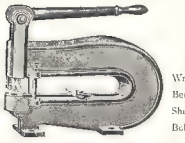
		Each
No. 1—	1½ inch Cut; will Punch ⅛ inch Iron and to the Center of a 5½ inch Circle; Complete with 4 Punches; Sizes ⅛, 5-16, ⅜ and 5-16 inch; Weight Each 100 lbs.	$33 50
✣ **No. 2**—	3 inch Cut; will Punch 3-16 inch Iron and to the Center of a 8½ inch Circle; Complete with Five Punches, Sizes ⅛, 3-16, ¼, 5-16 and ⅜ inch; Weight Each 120 lbs.	42 00

20 00
25 00

✣ EXTRA PARTS

✣ For Machine, Nos.	1 Each	2 Each
✣ **Bed, Complete** (Drilled and Fitted)	$15 80	10 00	$20 10	12 00
✣ **Die Holders**	1 80	1.00	1 80	1 00
✣ **Extra Punches**	1 30	.75	1.30	.75
✣ **Extra Dies**	2 10	1.25	2.10	1 25

Loose



MACHINE PUNCHES

IMPROVED SAMPSON

With Adjustable Gauge

Made of Cast Iron; with Wrought Iron Links; Fastened to Bench with Bolts; when Large Sheets are to be Punched the Stay Bolts are Removed.

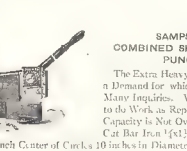
		Each
No. 5	Depth of Gap 15 inches; will Punch No. 9 Iron and to the Center of 7 inch Sheets, when Stay Bolts are in Place, will Punch No. 12 Iron and to the Center of 30 inch Sheets with Stay Bolts Removed; Complete with 3 Sets of Dies and Punches, Sizes ⅛ 3-16 and ¼ inch; Weight 95 lbs.	$42 00

25.00

✣ EXTRA PARTS

	Each
Bed, Complete, Drilled and Fitted; Weight Each 120 lbs.	20 50	12 00
Punches, ⅛, 3-16 or ¼ inch; Weight Each 3 ozs.	1 30	75
Dies; Weight Each 3 ozs.	2 10	1 75

Loose



SAMPSON COMBINED SHEARS AND PUNCH

The Extra Heavy Punch Supplies a Demand for which we have had Many Inquiries. We Guarantee it to do Work as Represented and its Capacity is Not Overstated. Will Cut Bar Iron ½x1½, ⅝x1¼, Square and Punch Center of Circles 10 inches in Diameter.

✣ **No. 3 Shear and Punch;** 4 inch Cut, Will Punch ⅝ in Iron, and will Cut No. 8 Sheet Iron Lengthwise or Crosswise. Complete with Three Punches and Dies, Size ⅜, 7-16 and ½ inch; Also Furnished with Lever for each End. Weight 400 lbs. $130 00 75 00

✣ EXTRA PARTS

✣ **Bed, Complete** (Drilled and Fitted) For No. 3	$70 00	35 00
✣ **Punches,** ½, ⅝ or ¾ inch	2 00	1 00
✣ **Dies,** ½, 5/16 or ⅜ inch	3 00	1 50

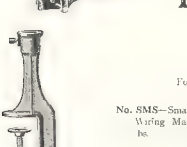
Loose

IMPROVED LEVER

This is a Portable Punch, Contents, Light Weight with Strength, and will be Found Very Handy and Useful; it Works Easily and Rapidly, and Both the Back and Side Gauges are Easily Adjusted; Adapted to Metals up to 20 Gauge

		Each
No. 10—	Depth of Gap 1½ inches; Complete with One Die and Three Punches, Sizes ⅛, 3-16 and ¼ inch; Weight Each 10 lbs.	$13 40	8 00

Loose



MACHINE STANDARDS

For Small Machines	Each
No. SMS—Small Plain, for all Except Wiring Machines; Weight Each 11 lbs.	$2 10	1 00

Loose

For Wiring Machines	Each
No. WMS—With Horn; for Wiring Machines; Weight Each 11½ lbs.	$2 10	1 00

Loose

Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

POCKET KNIVES

★J. KOESTER'S SONS', GERMANY

High Grade Imported; English Steel Blades, Ground to a Fine Cutting Edge; Perfectly Fitted and Beautifully Finished by Skilled Workmen. Free from Flaws and Imperfections. FULLY GUARANTEED.

TWO BLADE PENS

Cuts Three Quarter Size

Senator Pattern. Length 3⅛ inches; German Silver Scored Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen

No. C2091⅛GST Genuine Stag Handle. **$12.00**

Sleeve Board Pattern; Length 3 inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 10 ozs.

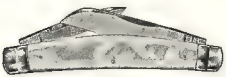
Per Dozen

No. C2006ST—Patent Stag Handle **$8 50**
No. C2006W —Genuine Ivory Handle **9.00**
No. C2006P —Pearl Handle **20.00**

Sleeve Board Pattern; Length 3¾ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C2090GST —Genuine Stag Handle. **$11 00**
No. C2090W —White Bone Handle. **9 00**
No. C2067P —Pearl Handle. **24 00**



Congress Pattern; Length 3¼ inches; Polished Steel Rat Tail Bolsters; One Large Congress and One Small Pen Blade; Half Polished; Iron Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C2023P—Pearl Handle. **$20 00**

Congress Pattern; Length 3¾ inches; German Silver Flush Bolsters; One Large Congress and One Small Pen Blade; Half Polished; Brass Lining; German Silver Shield, Weight per Dozen 20 ozs.

Per Dozen

No. C2075ST—Patent Stag Handle. **$10 00**

Balloon Pattern; Length 3¼ inches; German Silver Bolsters, One Large Spear and One Large Clip Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C2074ST Patent Stag Handle. **$10.00**

Congress Pattern; Length 3¾ inches; German Silver Bolsters; Two Large Congress Blades; Half Polished; Brass Lining; German Silver Shield, Weight per Dozen 20 ozs.

Per Dozen

No. C2076ST—Patent Stag Handle **$10.50**

Fancy Art Design; Full Oval Pattern; Length 3¼ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Unlined; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C2093A—Aluminum Handle. **$10 00**

Office Knife; Length 3¼ inches; Uncapped; One Large Spear and One Large Eraser Blade, Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C2018W—White Bone Handle **$16.50**
No. C2018P —Pearl Handle. **$3.00**

Half Dozen in a Box

POCKET KNIVES

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High Grade Imported; English Steel Blades, Ground to a Fine Cutting Edge; Perfectly Fitted and Beautifully Finished by Skilled Workmen. Free from Flaws and Imperfections. FULLY GUARANTEED.

TWO BLADE PENS

Cuts Three Quarter Size

Balloon Pattern; Length 2⅝ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

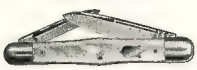
Per Dozen
No. C2072P—Pearl Handle.....$10 00

Length 2⅞ inches; German Silver Bolsters; One Large Clip and One Small Pen Blade; Full Polished; Brass Lining; No Shield, Weight per Dozen 8 ozs.

Per Dozen
No. C2095P—Pearl Handle.....$10 50

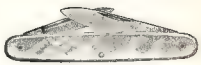
Congress Pattern; Length 3 inches; German Silver Rat Tail Bolsters; One Large Congress and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C2097P—Pearl Handle.....$10.50



Balloon Pattern; Length 3 inches; German Silver Bolsters, One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C2071P—Pearl Handle.....$15.00



Shadow Pattern; Length 3 inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. C2068P—Pearl Handle.....$27 00

Congress Pattern; Length 3 inches; German Silver Flush Bolsters, One Large Congress and One Small Pen Blade, Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. C2096P—Pearl Handle.....$12 00

Congress Serpentine Pattern; Length 3 inches; German Silver Tipped; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen
No. C2027P—Pearl Handle.....$20 00

Serpentine Pattern; Length 2¾ inches; German Silver Bolsters; One Large Clip and One Small Pen Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 8 ozs.

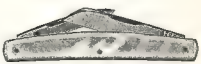
Per Dozen
No. C2069P—Pearl Handle.....$15 00

Length 3 inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C2094P—Pearl Handle.....$10.50

Senator Pattern; Length 3 inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C2098P—Pearl Handle.....$15 50



Congress Pattern; Length 3 inches; Uncapped; One Large Congress and One Small Pen Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C 2030P—Pearl Handle.....$24.00

Half Dozen in a Box

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FOUR BLADE PENS

Cuts Three Quarter Size

Senator Pattern; Length 2¾ inches; German Silver Capped; One Small Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4099P—Pearl Handle.....$17.00

Senator Pattern; Length 2½ inches; Uncapped; One Small Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4001P—Pearl Handle $21 00

Senator Pattern; Length 2½ inches; German Silver Tipped; One Small Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4000P—Pearl Handle $22 00

Serpentine Pattern; Length 2⅝ inches; German Silver Bolsters; One Small Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4098P—Pearl Handle.....$17.00

Congress Pattern; Length 2½ inches; Uncapped; One Small Congress, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C4026P—Pearl Handle..... .....$19.00

Congress Pattern; Length 2¾ inches; Uncapped; One Small Congress, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4002P—Pearl Handle..... $22 00

Congress Pattern; Length 2⅝ inches; German Silver Scored Bolsters; One Small Congress, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4005P—Pearl Handle.... .. ....$22 00

Senator Pattern; Length 3¼ inches; Uncapped; One Large Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C4094GM—Gun Metal Handle....$33.00

Lobster Pattern; Length 2⅞ inches; Uncapped; One Small Congress, Two Small Pens and One File Blade; Full Polished; Unlined, No Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C4095GM—Gun Metal Handle.. $28.00

Lobster Pattern; Length 3 inches; Uncapped; One Small Congress, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C4059P—Pearl Handle.....$41 00

Congress Pattern; Length 3 inches; German Silver Bolsters; One Large Congress, Two Small Pens and One File Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C4092P—Pearl Handle.....$18 00

Congress Pattern; Length 3½ inches; German Silver Rat Tail Bolsters; One Large Congress, Two Small Pens and One File Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C4017P—Pearl Handle.. . . . .$28 00

Half Dozen in Box

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TWO BLADE PENS

Cuts Three Quarter Size

Balloon Pattern; Length 3½ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C2070P—Pearl Handle **$15.00**

Wharncliffe Pattern; Length 3 inches; German Silver Rat Tail Bolsters; One Large Wharncliffe and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C2032P—Pearl Handle **$10 00**

Senator Pattern; Length 3¾ inches; German Silver Tipped; One Large Spear and One Large Corn Blade; Full Polished; Brass Lining; German Silver Shield; Weight per Dozen 12 ozs.

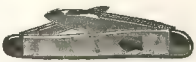
Per Dozen

No. C2065½GST—Genuine Stag Handle **$15.00**

Senator Pattern; Length 3¾ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Unlined; No Shield; Weight per Dozen 10 ozs.

Per Dozen

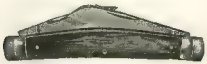
No. C3006GM—Gun Metal Handle **$10 00**



Wharncliffe Pattern; Length 3 inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C2008ST—Patent Stag Handle **$16.00**
No. C2008P —Pearl Handle **19 00**



Congress Pattern; Length 3½ inches; Polished Steel Rat Tail Bolsters; One Large Congress and One Small Pen Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C2002GST—Genuine Stag Handle **$11.00**
No. C2002W —White Bone Handle **10 00**
No. C2002P —Pearl Handle **17.00**

Sleeve Board Pattern; Length 3¼ inches; German Silver Tipped; One Large Spear and One Small Pen Blade; Full Polished; Brass Lined, Milled; German Silver Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C2001B —Buffalo Horn Handle **$10 00**
No. C2001ST—Patent Stag Handle **15.00**
No. C2001W—White Bone Handle **10.00**
No. C2001P —Pearl Handle **23.50**

Senator Pattern; Length 3½ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Unlined; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C2077N—German Silver Handle **$10.00**

Easy Opener, Senator Pattern; Length 3 inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; Unlined; No Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C8001N—German Silver Handle **$20.00**

Half Dozen in a Box

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TWO BLADE PENS

Cuts Three Quarter Size

Lobster Pattern; Length 2⅝ inches; Uncapped; One Small Pen and One File Bladt; Full Polished; German Silver Lining, Milled; German Silver Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2022P—Pearl Handle.....$20.00

Lobster Pattern; Length 2½ inches; Uncapped; One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C2021P.—Pearl Handle.....$20.00

Balloon Pattern; Length 2¼ inches; German Silver Fancy Bolsters; One Small Sheep Foot and One Small Pen Blade; Full Polished; German Silver Lining; German Silver Shield; Weight per Dozen 4 ozs.

Per Dozen

No. C2010P—Pearl Handle.....$11.00

Slim Senator Pattern; Length 2½ inches; Uncapped; One Small Spear and One Small Pen Blade; Full Polished; German Silver Lining; no Shield; Weight per Dozen 4 ozs.

Per Dozen

No. C2011P—Pearl Handle.....$10.50

Slim Senator Pattern, Length 2½ inches; German Silver Bolsters; One Small Spear and One Small Pen Blade; Full Polished; German Silver Lining, No Shield; Weight per Dozen 4 ozs.

Per Dozen

No. C2012P—Pearl Handle.....$10.50

Senator Pattern; Length 2¼ inches; Uncapped; One Small Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2062P—Pearl Handle.....$14.50

Congress Pattern; Length 2½ inches; Uncapped; One Small Congress and One File Blade; Full Polished; German Silver Lining, No Shield; Weight per Dozen 4 ozs.

Per Dozen

No. C2026P—Pearl Handle.....$11.00

Congress Pattern; Length 2½ inches; German Silver Bolsters; One Small Sheep Foot and One Small Pen Blade; Full Polished; German Silver Lining; German Silver Shield; Weight per Dozen 4 ozs.

Per Dozen

No. C2017ST—Patent Stag Handle....$ 8.50
No. C2017P —Pearl Handle..... 11.50

Sleeve Board Pattern; Length 2½ inches; Uncapped; One Small Spear and One File Blade; Full Polished; German Silver Lining, Milled; no Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2005P—Pearl Handle.....$12.00

Senator Pattern; Length 2⅝ inches; German Silver Bolsters; One Small Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2061P—Pearl Handle.....$14.00

Stock Pattern; Length 2⅝ inches; German Silver Bolsters; One Small Congress and One File Blade; Full Polished; German Silver Lining, Milled; no Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2014P—Pearl Handle.....$14.00

Sleeve Board Pattern; Length 2⅝ inches; German Silver Capped; One Small Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2063P—Pearl Handle.....$15.00

Congress Pattern; Length 2¾ inches; Uncapped; Two Small Pen Blades, Full Polished; Brass Lining; No Shield; Weight per Dozen 6 ozs.

Per Dozen

No. C2013P—Pearl Handle.....$17.00

Length 2¾ inches; Uncapped; One Large Spear and One Small Pen Blade; Full Polished; German Silver Lining, Milled; no Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C2022½P—Pearl Handle.....$33.50

Length 2¾ inches; German Silver Bolsters; One Large Spear and One Small Pen Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 8 ozs.

Per Dozen

No. C2072P—Pearl Handle.....$16.00

Half Dozen in a Box

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POCKET KNIVES

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This is a Factory Line which we Control the Sale of for the U. S., Comprising a Most Excellent Line of Patterns, Mostly Pen Knives. They are Very Highly Finished and Exceptionally Well Made Throughout. Many have the Impression that German Knives are a Cheap and Inferior Quality. They do Make Some Very Cheap Goods, but, in Addition, they Make Some Exceptionally High Grade Lines, and our "KOESTER" Line is in the First Rank of Quality and Perfection, the Knives Being Sold at Attractive Prices.

J. KOESTER'S SONS'

CELEBRATED "CLOVER BRAND" CUTLERY

Our productions are of the very finest quality. They are made of the very best ENGLISH CRUCIBLE CAST STEEL, hardened and tempered by experienced workmen and sent out ready for use.

In whetting a POCKET KNIFE the blade should be held at an angle and not laid flat on the stone like a RAZOR.

The JOINTS SHOULD BE KEPT OILED, and the knife will work smooth and open and shut well.

NORVELL-SHAPLEIGH HARDWARE CO.

ST. LOUIS

SOLE AGENTS FOR THE UNITED STATES.

Fac-simile of the Circular Wrapped Around Each Koester Pocket Knife

POCKET KNIVES

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High Grade Imported; English Steel Blades, Ground to a Fine Cutting Edge; Perfectly Fitted and Beautifully Finished by Skilled Workmen. Free from Flaws and Imperfections. FULLY GUARANTEED.

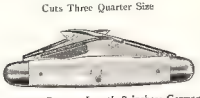
THREE BLADE PENS

Cuts Three Quarter Size

Balloon Pattern; Length 3¼ inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Half Polished; Brass Lining, No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C3070P Pearl Handle..... $17.50



Senator Pattern; Length 3 inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 14 ozs.

Per Dozen

No. C3028P—Pearl Handle..... $23 00

Senator Pattern; Length 3¼ inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; Unlined; No Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C3077GM—Gun Metal Handle....$20 00

Shadow Pattern; Length 3 inches; Uncapped; One Large Spear and Two Small Pen Blades; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen

No. C3049P—Pearl Handle.....$32.00

Length 3½ inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled, No Shield; Weight per Dozen 14 ozs.

Per Dozen

No. C3017P—Pearl Handle.....$36 00

Shadow Pattern; Length 3¼ inches; Uncapped; One Large Spear and Two Small Pen Blades; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 12 ozs.

Per Dozen

No. C3012P—Pearl Handle.....$36 00

Sleeve Board Pattern; Length 3¼ inches, German Silver Bolsters; One Large Spear, One Small Pen and One File Blade Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C3067ST—Patent Stag Handle. $11 00

Sleeve Board Pattern; Length 3½ inches, German Silver Tipped; One Large Spear, One Small Pen and One File Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C3061ST Patent Stag Handle. $11 00

Wharncliffe Pattern; Length 3¼ inches; German Silver Rat Tail Bolsters; One Large Wharncliffe and Two Small Pen Blades; Full Polished, Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C3066ST—Patent Stag Handle....$11 00

Sleeve Board Pattern; Length 3¾ inches; German Silver Tipped; One Large Spear, One Small Pen and One File Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No C3069ST—Patent Stag Handle $11 00

Wharncliffe Pattern; Length 3¾ inches; German Silver Bolsters; One Large Clip, One Small Pen and One File Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C3066ST— Patent Stag Handle. .$11 00

Balloon Pattern; Length 3¾ inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

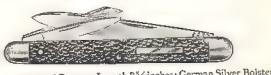
Per Dozen

No. C3068ST—Patent Stag Handle....$11 00

Senator Pattern; Length 3½ inches; German Silver Bolsters; One Large Spear, One Small Pen and One File Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C3063ST –Patent Stag Handle.....$11.00



Slim Sleeve Board Pattern; Length 3¾ inches; German Silver Bolsters; One Large Spear and Two Small Pen Blades; Half Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C3036ST—Patent Stag Handle $17 00
No. C3036P —Pearl Handle..... . . . . 00 00

Half Dozen in a Box

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FOUR BLADE PENS

Cuts Three Quarter Size

Congress Pattern; Length 3¼ inches; German Silver Bolsters; One Large Congress, Two Small Pens and One File Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C4078P—Pearl Handle..... .. ..**$26.00**

Congress Pattern; Length 3⅜ inches; German Silver Bolsters; One Large Congress, Two Small Pens and One File Blade; Half Polished; Brass Lining, Milled; No Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C4012P—Pearl Handle. **$31 00**

Congress Pattern; Length 3¼ inches; German Silver Scored Bolsters; One Large Congress, Two Small Pens and One File Blade; Half Polished Brass Lining, German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C4077P—Pearl Handle..... ....**$36.00**

Congress Pattern; Length 3¼ inches; German Silver Scored Bolsters; One Large Congress, Two Small Pens and One File Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 16 ozs.

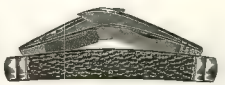
Per Dozen

No. C4023GST—Genuine Stag Handle.... .....**$22 00**

Congress Pattern; Length 3¼ inches; German Silver Flush Bolsters; One Large Congress, Two Small Pens and One File Blade; Half Polished Brass Lining; German Silver Shield; Weight per Dozen 18 ozs.

Per Dozen

No. C4088ST—Patent Stag Handle..... ....**$11.00**



Congress Pattern; Length 3⅜ inches; Polished Steel Rat Tail Bolsters; One Large Congress, Two Small Pens and One File Blade; Full Polished, Brass Lining; No Shield; Weight per Dozen 16 ozs.

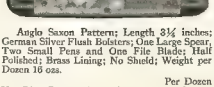
Per Dozen

No. C4017ST—Patent Stag Handle..... .**$15 00**

Senator Pattern; Length 3¼ inches; Uncapped; One Large Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; German Silver Shield; Weight per Dozen 16 ozs.

Per Dozen

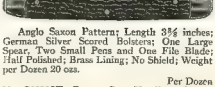
No. C4013P—Pearl Handle.....**$39.00**



Anglo Saxon Pattern; Length 3¼ inches; German Silver Flush Bolsters; One Large Spear, Two Small Pens and One File Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 16 ozs.

Per Dozen

No. C4078P—Pearl Handle.....**$38.00**



Anglo Saxon Pattern; Length 3⅜ inches; German Silver Scored Bolsters; One Large Spear, Two Small Pens and One File Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 20 ozs.

Per Dozen

No. C4006ST—Patent Stag Handle **$11 00**

Half Dozen in a Box

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FOUR BLADE PENS

Cuts Three Quarter Size

Senator Pattern; Length 3¼ inches; Uncapped; One Large Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; German Silver Shield, Weight per Dozen 12 ozs.

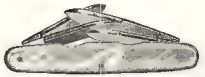
Per Dozen
No. C4006P—Pearl Handle..... ... **$36.00**

Senator Pattern; Length 3 inches; Uncapped; One Large Spear, Two Small Pens and One File Blade, Full Polished; German Silver Lining, Milled; No Shield, Weight per Dozen 12 ozs.

Per Dozen
No. C4056P Pearl Handle..... **$32 00**

Senator Pattern; Length 3 inches; Uncapped; Pearl Back Covered Springs; One Large Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4089P Pearl Handle.....**$43 00**



Senator Pattern, Length 3 inches; Uncapped; One Large Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4008P—Pearl Handle..... ...**$34 00**

Senator Pattern; Length 3 inches; German Silver Tipped, One Large Spear, Two Small Pens and One File Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4088ST Patent Stag Handle. **$11 00**
No. C4081P —Pearl Handle... ..... **20 00**

Senator Pattern, Length 3 inches; German Silver Tipped, One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining, Milled; German Silver Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4039½GST—Genuine Stag Handle.....**$20 00**

Senator Pattern; Length 3 inches; German Silver Scored Bolsters; One Large Spear, Two Small Pens and One File Blade; Half Polished; Brass Lining; German Silver Shield; Weight per Dozen 16 ozs.

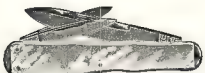
Per Dozen
No. C4087ST Patent Stag Handle....**$11 00**

Senator Pattern; Length 3 inches; German Silver Flush Bolsters; One Large Spear, Two Small Pens and One File Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4038P—Pearl Handle.....**$33.00**

Balloon Pattern; Length 3¼ inches; German Silver Bolsters; One Large Spear, Two Small Pens and One File Blade, Half Polished; Brass Lining; No Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4091P—Pearl Handle **$15.00**

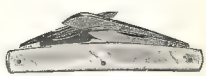


Length 3½ inches; German Silver Tipped; One Large Spear, Two Small Pens and One File Blade; Full Polished; German Silver Lining, Milled, No Shield, Weight per Dozen 14 ozs.

Per Dozen
No. C4087P—Pearl Handle **$54 00**

Swell Center Congress Pattern; Length 3¼ inches; German Silver Bolsters; One Large Congress, Two Small Pens and One File Blade, Half Polished; Brass Lining; German Silver Shield, Weight per Dozen 14 ozs.

Per Dozen
No. C4080P—Pearl Handle **$20 00**



Congress Pattern; Length 3¼ inches; Uncapped, One Large Congress, Two Small Pens and One File Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 14 ozs.

Per Dozen
No. C4035P—Pearl Handle **$30 00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIVES

*J. KOESTER'S SONS', GERMANY

High Grade Imported; English Steel Blades, Ground to a Fine Cutting Edge; Perfectly Fitted and Beautifully Finished by Skilled Workmen. Free from Flaws and Imperfections. FULLY GUARANTEED.

THREE BLADE PENS

Cuts Three Quarter Size

Lobster Pattern; Length 2¾ inches; Uncapped; One Small Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 6 ozs.

Per Dozen
No. C3072P—Pearl Handle..... $26 00

Lobster Pattern; Length 2¾ inches; Uncapped; One Small Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 6 ozs.

Per Dozen
No. C3073P—Pearl Handle..... $28.00

Lobster Pattern; Length 2¾ inches; Uncapped; with Ring; One Small Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C3043P—Pearl Handle.....$28.00

Lobster Pattern; Length 2¾ inches; Uncapped; One Small Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. C3074P—Pearl Handle.....$27.00

Lobster Pattern; Length 2¾ inches; Uncapped; One Small Spear, One Small Pen and One File Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C3009P—Pearl Handle. $31.00

Lobster Pattern; Length 3 inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 10 ozs.

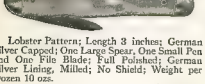
Per Dozen
No. C3059GST—Genuine Stag Handle. $28.00

Lobster Pattern; Length 3 inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C3081P —Pearl Handle; German Silver Lining.....$32 00
No. C3078GM—Gun Metal Handle; Unfined..... 20.00

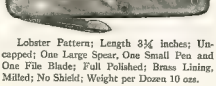
Lobster Pattern; Length 3 inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining; Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C3081W—White Bone Handle....$33.00
No. C3081P —Pearl Handle 29 00



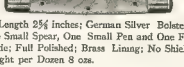
Lobster Pattern; Length 3 inches; German Silver Capped; One Large Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C3075P—Pearl Handle.....$36 00



Lobster Pattern; Length 3¼ inches; Uncapped; One Large Spear, One Small Pen and One File Blade; Full Polished; Brass Lining, Milled; No Shield; Weight per Dozen 10 ozs.

Per Dozen
No. C3046P—Pearl Handle..... .. $37.00

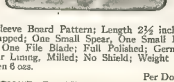


Length 2¾ inches; German Silver Bolsters; One Small Spear, One Small Pen and One File Blade; Full Polished; Brass Linng; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. C3083P—Pearl Handle.... .....$17.00

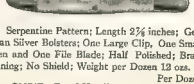
Sleeve Board Pattern; Length 2¾ inches; German Silver Bolsters; One Small Spear, One Small Pen and One File Blade; Full Polished; Brass Lining; No Shield; Weight per Dozen 8 ozs.

Per Dozen
No. C3082P—Pearl Handle..... .. $17.00



Sleeve Board Pattern; Length 2¾ inches; Uncapped; One Small Spear, One Small Pen and One File Blade; Full Polished; German Silver Lining, Milled; No Shield; Weight per Dozen 6 ozs.

Per Dozen
No. C3015P—Pearl Handle... ....$21.00



Serpentine Pattern; Length 2¾ inches; German Silver Bolsters; One Large Clip, One Small Pen and One File Blade; Half Polished; Brass Lining; No Shield; Weight per Dozen 12 ozs.

Per Dozen
No. C3071P—Pearl Handle $17.50

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

Prices Quoted Upon Request

✠WARREN GLASS DOOR TOOL CABINETS

FOR MECHANICS TOOLS

Furnished in Selected Choice Antique Oak, Double Strength AA Glass, Moisture and Dust proof, Shipped, complete with Brackets, etc. The Interior is Correctly Arranged for the Tools Represented.

SLIDING GLASS DOORS

Doors Run on Ball Bearing Rollers on Metal Tracks; Paneled Ends; Ornamental Top Cornice

Cabinet No. 3014—For Mechanics' Tools. The top, back and ends are lined with a high grade quality of Red Felt, back of which is padding that aids in retaining the rich color of the lining and serves as a protective factor of dampness. Each bracket holds a half dozen articles, 10⅜ inches long, flush (10⅜ inches with end cornice), 84 inches high 15⅝ inches deep (17⅝ inches including cornice). Approximate weight, packed, 400 lbs.

WARREN SLIDING GLASS DOOR DISPLAY CABINETS

Furnished in Selected Choice Antique Oak, Paneled Ends; Ornamental Top Cornice, Double Strength AA Glass; Ball Bearing Rollers on Metal Track; Moisture and Dust proof, adjustable partitions, to fit contents.

Cabinet No. 3030—Top, sides and back are of selected quarter sawed oak and are paneled. Note Plate Brackets and Key Tab, slots, enabling the merchant to adjust the shelves to suit articles displayed. 10⅜ inches long, flush (10⅜ inches with end cornice), 84 inches high 15⅝ inches deep (17⅝ inches with cornice). Approximate weight packed, 320 lbs.

In Ordering, State on Which Side of Store Shelving is to be Used

See Explicit Directions for Ordering on Page 3501

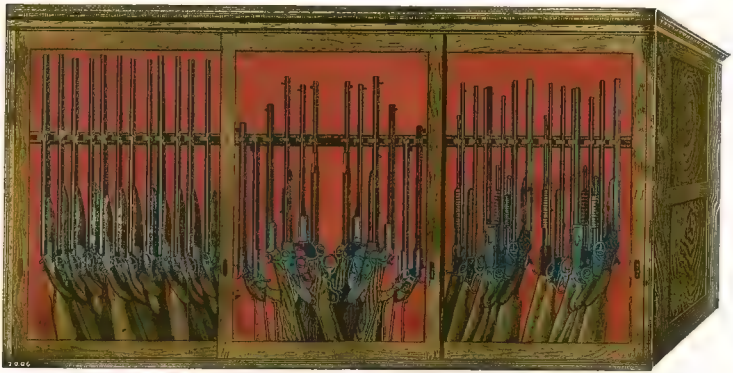
✠Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

✠ WARREN SLIDING GLASS DOOR GUN CABINETS

Prices Quoted Upon Request

Thoroughly Seasoned Choice Antique Oak, Paneled Ends, Ornamental Top Cornice, Double Strength AA Glass, Ball Bearing Rollers on Metal Track, Moisture and Dust proof, Shipped complete with Brackets etc. The Interior is Correctly Arranged for (as Lines Represented)

Cabinet No. 7000—Is especially designed to assemble in one case a line of Guns, Fishing Rods, Loaded Shells, Caps, etc., etc. Lined throughout with Red Felt. 100¾ inches long (back 103⅞ inches with end cornice), 54 inches high, 15¾ inches deep (at base, including cornice). Approximate weight, packed, 400 lbs.



Cabinet No. 7006—Lined throughout with Red Felt. Has a style large to show a complete line of Single and Double Barrel Shot Guns, Rifles, etc. Gun Brackets being crescent shaped, permit entire length of Gun to be seen at all times. 100¾ inches long (back 103⅞ inches with end cornice), 84 inches high, 15¾ inches deep (17¾ inches with end cornice). Approximate weight, packed, 425 lbs.

Cabinet No. 7007—Same as illustrated and described above, with Mirror Inside Ends; Approximate weight, packed, 425 lbs.

In Ordering, State on Which Side of Store Shelving is to be Used

See Explicit Directions for Ordering on Page 3501

✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

OFFICE CLOCKS

REGULATOR E

8 Day Time; Oak Case, Fancy Carved Moulding and Trimmings, Golden Finish; Glass Doors; Roman Numerals; Height 38½ inches.

Each

No. SE12—12 inch Dial..... **$8.00**

One in a Box, Three in a Crate; Crate Weighs 90 lbs.

(Made by Sessions Clock Co.)

RAMONA

8 Day Time; Weathered Finish Oak Case, Mission Style; Glass in Lattice Work; Brass Figures, Hands, Hinges and Catch; Height 31 inches.

Each

No. MR12—12 inch Dial. .. **$9.60**

One in a Box, Three in a Crate; Crate Weighs 70 lbs.

(Made by Sessions Clock Co.)

REGULATOR E CALENDAR

8 Day Time and Calendar; Oak Case, Golden Finish; Glass Doors, Roman Numerals; Height 38½ inches; Fancy Carved Moulding and Trimmings.

Each

No. SEC12—12 inch Dial ... **$5 00**

One in a Box, Three in a Crate; Crate Weighs 90 lbs.

(Made by Sessions Clock Co.)

CAPITOL

CAPITOL

8 Day Weight Time; Oak Case, Golden Finish; Case is Handsomely Carved and has Fancy Ornaments; Glass Door; Roman Numerals; Provided with Second Hand; Height 54 inches.

Each

No. AC8—8 inch Dial..... ...**$26.00**

One in a Case; Weight 59 lbs.

(Made by Ansonia Clock Co.)

SANTA FE

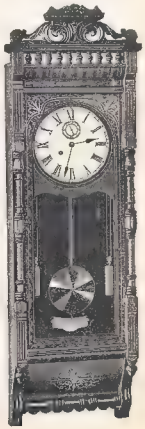
8 Day Weight Time; Oak Case, Golden Finish; Case is Handsomely Carved and Has Fancy Ornaments; Glass Door; Roman Numerals; Provided with Second Hand; Height 52 inches.

Each

No. ASF10—10 inch Dial..... . .**$43 50**

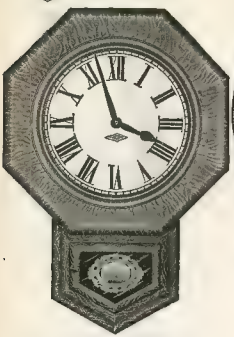
One in a Case; Weight 80 lbs.

(Made by Ansonia Clock Co.)



SANTA FE

OFFICE CLOCKS



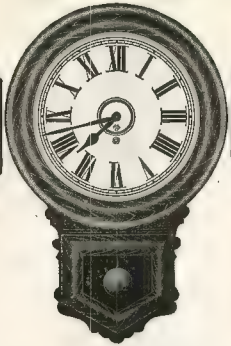
***NORLEIGH DIAMOND OCTAGON DROP**

A Perfect Time Piece for Railroad Stations, Offices, General Stores, Factories, Government Purposes, Schools, Hotels and General Home Use.

Each

No. NDZ50—8 Day Time; 12 inch Dial; Polished Golden Oak Case; Glass Doors; Roman Numerals; Height 17 inches..... **$8.00**

To Run Perfectly, Clock must be Hung True or Plumb; Should it Run Too Fast, Lengthen the Drop of the Pendulum; if too Slow, Shorten the Drop. One in a Case; Weight 23 lbs. Made for and Guaranteed by Norvell-Shapleigh Hardware Co.



ROUND DROP

8 Day Time; 12 inch Dial; Polished Veneer Case; Glass Doors; Roman Numerals; Height 23½ inches.

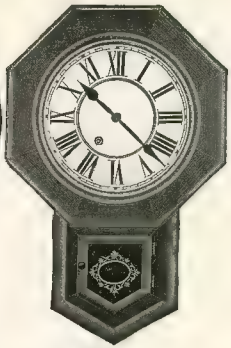
Each

No. RDO12—Golden Oak..... **$7.20**

No. RDR12—Rosewood..... **7.20**

Six in a Case; Case Weighs 105 lbs.

(Made by Ansonia Clock Co.)



OCTAGON DROP

8 Day Time; 12 inch Dial; Polished Veneer Case; Glass Doors; Roman Numerals; Height 24 inches.

Each

No. ODO12—Golden Oak..... **$8 00**

No. ODR12—Rosewood..... **8 00**

Six in a Case; Case Weighs 105 lbs.

(Made by Ansonia Clock Co.)

REGULATOR A

8 Day Time; 12 inch Dial; Plain Octagon Polished Veneer Case; Glass Doors; Roman Numerals; Height 32 inches.

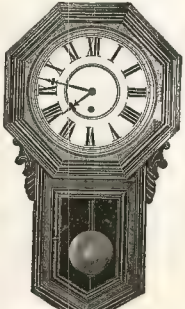
Each

No. RAA—Ash..... **$11.00**

No. RAW—Black Walnut..... **11 00**

Three in a Case; Weight 91 lbs.

(Made by Ansonia Clock Co.)



REGULATOR B

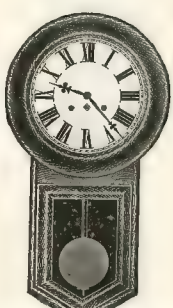
8 Day Time; 12 inch Dial; Fancy Octagon Polished Veneer Case; Glass Doors; Roman Numerals; Height 32 inches.

Each

No. RBO—Golden Oak..... **$8.50**

Three in a Case; Weight 88 lbs.

(Made by Ansonia Clock Co.)



REGULATOR C

8 Day Time; 12 inch Dial; Plain Round Polished Veneer Case; Glass Doors; Roman Numerals; Height 32 inches.

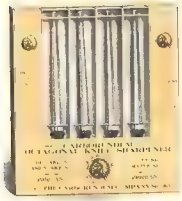
Each

No. RCO—Golden Oak..... **$10.00**

No. RCR—Rosewood..... **10.00**

Three in a Case; Weight 90 lbs.

(Made by Ansonia Clock Co.)



No. 78

Carborundum Octagonal Knife Sharpeners in Display Box

No. 149

Carborundum Pocket Hones in Display Carton.

No 76

Carborundum Round Knife Sharpeners in Display Box

CARBORUNDUM
REG. U.S. PAT. OFF.
HARDEST AND SHARPEST
REG. U.S. PAT. OFF.
NIAGARA FALLS

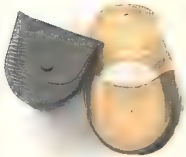
No. 109B

Carborundum Oil Stones, mounted in Wooden Boxes, of Quartered Oak, well finished.

Carborundum Razor Hones

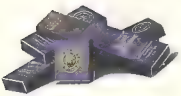
Nos. 101, 102, 103, 104, 106

Made from the finest hand-washed Carborundum Powder



No. 113

Carborundum Round Combination Sportsmen's Stones. In genuine pig skin or imitation walrus leather cases



No. 200

Aloxite Razor Hones — Made from the marvelous new abrasive, Aloxite.

Nos. 190, 191
Carborundum Niagara Scythe Stones in Display Box

Nos. 190, 191C
Carborundum Niagara Scythe Stones in Display Carton

Carborundum Triangular Display Case of Sharpening Stones

THIS show-case is made of selected quartered oak, well finished. Triangular in shape, the two display surfaces are covered with black cloth, the stones arranged in attractive designs, protected by glass fronts of first quality. The back provided with paneled door. Interior fitted for carrying ample assortment of stones. Case is forty inches high, twenty-four inches wide. Free to dealers with purchase of a selling stock of Carborundum Sharpening Stones.

Carborundum Sharpening Stones
Four Drawer Display and Stock Case given free with No. 1 or No. 2 assortment of stones.

GRINDER DISPLAY STANDS

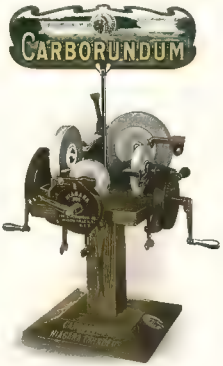
Given FREE to Dealers with an order for Grinders of quantities specified below. Grinders and Stand is must be shipped direct from the Factory at Niagara Falls, N. Y

No. 1 STAND TWO SECTIONS

45 inches high, 15 inch Square Base: Given Free with an order for Three No. 1, Three No. 2, Two No. 3 and One No. 4 Grinders

No. 2 STAND ONE SECTION
(See Cut)

32 inches high, 12 inch Square Base: Given Free with an order for Two No. 1, Two No. 2, Two No. 3, and One No. 4 Grinders



Carborundum Niagara Grinders on Display Stand
Made of quartered oak.

HUNTING KNIVES

Per dozen

No. 1784—Genuine Deer Foot Handle; Malleable Iron "S" Hilt and German Silver Bolster; Beveled Spear Blade, Length 6 inches; Glazed; Complete with Russet Leather Sheath, Weight per Dozen 4¼ lbs. **$17 00**

No. 1135

Genuine Deer Foot Handle; German Silver "S" Hilt and Bolster; Beveled Clip Blade, Glazed; Complete with Russet Leather Sheath.

Length Blade, Inches	6	7
Weight per Dozen, Lbs.	5¾	6½
Per Dozen	**$31 00**	**$35 00**

Half Dozen in a Box

FISHERMEN'S KNIVES

Per Dozen

No. 2—Checkered Cocobolo Handle; Full Scale Tang, Polished Steel Lapped Bolster; Fine Grade American Steel Blade; Length 4¾ inches; Glazed; Saw Back for Scaling and Concaved Sharp Ground Back at Point for Ripping; Handle has Hole in End for String; Without Sheath; Weight per Dozen 2½ lbs. **$10.00**

Per Dozen

No. 1—Solid Walnut Polished Handle; Blade Fastened into Handle with Two German Silver Rivets; Finest Quality Steel Double Edge Hawk Bill Blade; Length 2¾ inches; Glazed; German Silver Shield; Handle has Hole in End for String; Complete with Black Leather Sheath; Weight per Dozen 3 lbs. **$15.00**

Half Dozen in a Box

DIRKS

JOSEPH ALLEN & SONS, SHEFFIELD, ENGLAND

Best Quality English Steel Blades; Double Edge; Full Polished; Complete with Black Leather Sheaths

Per Dozen

No. 1168—Solid Twisted Pearl Handle; German Silver Hilt and Fancy Knurled Bolster; Length of Blade 4½ inches; Weight per Dozen 1¾ lbs. **$30 00**

Per Dozen

No. 1166—Solid Plain Pearl Handle; German Silver Hilt and Fancy Knurled Bolster; Length of Blade 4½ inches; Weight per Dozen 1¾ lbs. **$30 00**

Per Dozen

No. 1183 -Solid Genuine Stag Handle; German Silver Hilt; Scored Bolster and Plain Seal Cap; Length of Blade 4½ inches; Weight per Dozen 2½ lbs **$17 00**

Per Dozen

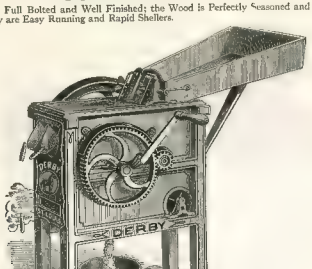
No. 1182—Solid White Celluloid Handle; German Silver Hilt and Fancy Knurled Bolster, Length of Blade 4½ inches; Weight per Dozen 2 lbs **$16 00**

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

CORN SHELLERS

These Shellers are Closely Mortised, Full Bolted and Well Finished; the Wood is Perfectly Seasoned and will not Crack nor Warp. The Frames are Rigid and will not Rack Loose. They are Easy Running and Rapid Shellers.



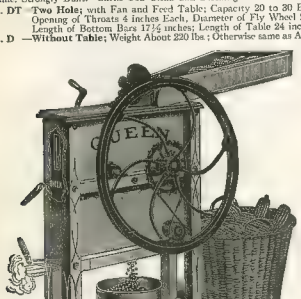
DERBY

For Hand or Power

With Fan, Feed Table, Crank and Power Pulley, Varnished Hardwood Frame and Box, with Green and Red Stripes; Mortised and Full Bolted Frame, Strongly Built. Shells Cob Clean and Discharges it at End of Sheller. Each

No. DT Two Hole; with Fan and Feed Table; Capacity 20 to 30 Bushels per Hour; Chilled Iron Grinders; Steel Shafts; Babbitted Journals; Opening of Throats 4 inches Each, Diameter of Fly Wheel 27 inches; Height of Box 40 inches; Width 30 inches, Thickness 8½ inches; Length of Bottom Bars 17½ inches; Length of Table 24 inches. Depth 3 inches; Greatest Width 13 inches; Weight 235 lbs **$30 00**

No. D —Without Table; Weight About 220 lbs.; Otherwise same as Above **29 00**

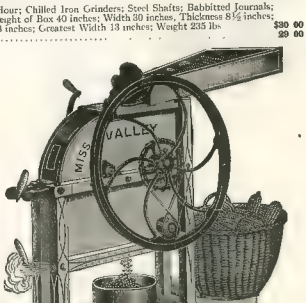


QUEEN

Varnished Hardwood Frame and Box, with Green and Red Stripes and Decorations, Mortised and Bolted; Shafts are Steel and Run in Metal Boxes; Steel Spokes in Balance Wheel; Shells all the Corn from the Cob and Discharges Cob at End of Sheller, the Fan Cleans the Corn Thoroughly. Each

No. NQT—One Hole; Capacity 15 to 20 Bushels per Hour; Chilled Iron Grinders; Steel Shafts; Babbitted Journals; Opening of Throat 4 inches, Diameter of Fly Wheel 27 inches; Height of Box 36 inches; Width 29 inches, Thickness 8½ inches; Length of Bottom Bars 17½ inches; Length of Table 24 inches, Depth 3 inches; Greatest Width 13 inches; Weight 125 lbs. **$16 00**

No. NQ —Without Table; Weight About 112 lbs.; Otherwise same as Above **14 50**



MISSISSIPPI VALLEY

Varnished Hardwood Frame and Box, with Green and Red Stripes and Decorations; Mortised and Full Bolted; Shafts are Steel and Run in Metal Boxes; Steel Spokes in Balance Wheel; Shells the Cob Clean and Discharges it at End of Sheller; the Fan Cleans the Corn Thoroughly. Each

No. MVT—One Hole; Capacity 20 to 30 Bushels per Hour; Chilled Iron Grinders; Steel Shafts, Opening of Throat 5¼ inches; Diameter of Fly Wheel 37 inches; Height of Box 42 inches, Width 25 inches, Thickness 8¼ inches; Length of Bottom Bars 17½ inches; Length of Table 25 inches, Depth 3 inches; Greatest Width 14 inches; Weight 130 lbs. **$16.00**

No. MV —Without Table; Weight About 115 lbs ; Otherwise Same as Above **10.86**

FEED MILLS

Monarch

Grinders Used on Both Mills

Young America

Heavy Cast Iron Body and Base, Painted Blue, Heavy Sheet Steel Tapering Hopper, Black Japanned; Hardened Cast Iron Enclosed Gearing Chilled Cast Steel Grinding Rings, Adjustable for Fine or Coarse Grinding; Steel Sweep Rod; Double Bar Hardwood Sweep, Painted, Strongly Braced and Bolted, 2½x4 inch Timber 1.4½ feet Long; Operated with One or Two Horses. Take Meal Can be Sifted from the Grindings.

MONARCH

To Set on Box; With Box

Discharges at all Points Around the Mill — Each

No. M—Capacity of Hopper 1 Bushel; Diameter of Top of Hopper 29½ inches; Diameter of Throat 19¾ inches; Height of Mill Only, 23 inches, Size of Box 48x28x12 inches, Made of 1¼ inch Wood. Length of Sweep Over All 11-6 feet; Weight Each 380 lbs. **$43.00**

YOUNG AMERICA

With Legs and Bolts to Fasten to Platform; Platform Not Included.

Discharges at One Point Only — Each

No. YA—Capacity of Hopper 1 Bushel, Diameter of Top of Hopper 23 inches; Height Over All 38 inches; Spread of Legs 29 inches; Length of Sweep Over All 11-6 feet; Weight Each 410 lbs. **$43 00**

CORN SHELLERS

PATCH BLACKHAWK

1903 Model

Shells Field Corn, Seed Corn and Pop Corn; Fastens to Barrel, Box or Box.

No. BH Capacity 6 to 10 Bushels per Hour; Throws Out the Cobs; Japanned Malleable Iron Castings; Hardened Bearings 4½ inches Long; Steel Axle; Chilled Grinders; Adjustable Hopper, Width 3½ inches, Depth 4 inches; Pressure Regulated by Heavy Wire Coil Springs; Diameter of Grinding Plate 7½ inches, Studded with ⅞ inch Oval Teeth; Length Over All 10 inches; Width 8½ inches; Length of Crank 9¾ inches; Weight Each 14 lbs. **$31 00**

Crank 11 inches. Weight Each 13 lbs

One Dozen in a Barrel, Weight per Barrel 171 lbs

Per Dozen **$37 00**

EASY

Shells Field Corn, Seed Corn and Pop Corn, Fastens to Barrel, Box or Box.

No. E Capacity 5 Bushels per Hour; Japanned Iron Castings; Hardened Bearings; Chilled Iron Grinders; Adjustable Hopper, Width 3 inches, Depth 4 inches; Pressure Regulated by Heavy Wire Coil Springs; Diameter of Grinding Plate 7 inches; Width 8 inches; Length Over All 17½ inches; Width 10 inches; Length of Crank 7 inches; Weight Each 12 lbs.

Per Dozen **$16 00**

Two Dozen in a Barrel

Weight per Barrel 410

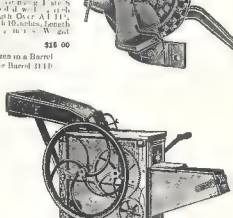
PATCH PONY

Shells Field Corn, Seed Corn and Pop Corn; Fastens to Barrel, Bin or Box.

Per Dozen

No. PP—Capacity 6 to 10 Bushels per Hour; Throws Out the Cobs, Japanned Malleable Iron Castings; Hardened Bearings 4½ inches Long; Steel Axle; Chilled Grinders; Adjustable Hopper, Width 3½ inches, Depth 4 inches; Pressure Regulated by Heavy Wire Coil Springs; Diameter of Grinding Plate 7½ inches, Studded with ⅞ inch Oval Teeth; Length Over All 10 inches; Width 8½ inches; Length of Crank 9¾ inches; Weight Each 14 lbs. **$31 00**

One Dozen in a Barrel



K NG

For Hand or Power

Hardwood Frame and Box, Varnished Natural Wood, Decorated with Green and Red Stripes. Strongly Built and Well Made Throughout Equipped with Feed Tube, Fan, Cob Carrier, Crank and Power Pulley.

Each

No. KT—Two Hole, Capacity 10 to 12 Bushels per Hour; Chilled Iron Grinders, Steel Axle; Height of Sheller Box 40 inches, Width at Top 34½ inches, Length of Bottom Cross Bars 24 inches; Diameter of Balance Wheel 27 inches; Power Pulley on Crank Shaft 8 inch Diameter, 4 inch Face; Length of Feed Table 29 inches, Depth 3 inches; Greatest Width 48 inches, Weight Complete About 240 lbs. **$36 00**

No. K—Without Table; Weight About 230 lbs.; Otherwise Same as Above. **34 50**

One in a Crate

FIELDERS' GLOVES

*DIAMOND BRAND

Chrome Tanned Drab Suede; Lined with Best Gray Wool Felt; Felt Padded; Edges Turned and Bound with Brown Imitation Leather; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 7¾ lbs.

Per Dozen

No. G75—Left Hand **$13.50**

Best Selected California Black Sheepskin; Lined with Best Gray Wool Felt Felt Padded; Edges Bound with Black Imitation Leather; Seams Welted with White Sheepskin Patent Web Thumb; Full Professional Pattern Padded Little Finger; Professional Hump and Deep Pocket; Strap and Button at Wrist; Weight per Dozen 7¾ lbs.

Per Dozen

No. G75P —Left Hand. **$15.00**

No. G75PRH—Right Hand **$15.00**

Extra Quality Heavy Maroon Sheepskin; Lined with Best Gray Wool Felt; Felt Padded; Edges Bound with Maroon Imitation Leather; Patent Web Thumb; Seams Welted with White Sheepskin; Strap and Button at Wrist; Weight per Dozen 7½ lbs.

Per Dozen

No. G75R—Left Hand..... **$13.50**

Per Dozen

No. G50—Left Hand; Selected Brown Tanned Sheepskin; Lined with Gray Wool Felt; Felt Padded; Edges Bound with Russet Imitation Leather; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 7 lbs. **$9.50**

Per Dozen

No. G50D—Left Hand; Good Grade Drab Sheepskin; Lined with Gray Wool Felt; Felt Padded; Edges Bound with Russet Imitation Leather; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 7 lbs. **$9.50**

Per Dozen

No. G50G—Left Hand; Olive Green California Napa Kid; Lined with Gray Wool Felt; Felt Padded; Edges Bound with Red Imitation Leather; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 7 lbs **$9.50**

Per Dozen

No. G50L—Left Hand; Selected Brown Tanned Sheepskin; **Half Brown Sheepskin and Gray Wool Felt Lined;** Felt Padded; Edges Bound with Russet Imitation Leather; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 7 lbs..... **$10.00**

Twelfth Dozen in a Box

Any of the Above Numbers Not Listed Regularly in Right Hand We Can Furnish to Special Order, Direct from Factory, at Same Prices as Left Hand.

"DIAMOND EDGE IS A QUALITY PLEDGE"

FIELDERS' GLOVES

*DIAMOND BRAND

Per Dozen

No. G50X—Left Hand; Selected Black Chrome Tanned Sheepskin; Gray Wool Felt Lined; Felt Padded; Edges Bound with Red Imitation Leather; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 7 lbs. **$9 50**

Per Dozen

No. G50B—Boys'; Left Hand; Extra Quality Boys' Glove; Best Selected Mocha Tan Sheepskin, Lined with Extra Grade Gray Wool Felt; Felt Padded; Edges Bound with Tan Sheepskin; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 6½ lbs. **$9 50**

Twelfth Dozen in a Box

Per Dozen

No. G25—Boys'; Left Hand; Selected Lemon Color Sheepskin; Gray Felt Lined and Padded; Edges Bound with Red Cloth; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 2½ lbs. **$4 70**

Per Dozen

No. G25B—Boys'; Left Hand; Selected Black Color Sheepskin; Gray Felt Lined and Padded; Edges Bound with Black Cloth; Plain Seams; Patent Web Thumb, Strap and Button at Wrist; Weight per Dozen 2½ lbs **$4 70**

Per Dozen

No. G25L—Boys'; Left Hand; Selected Wine Color Sheepskin, Gray Felt Lined Fingers; Brown Sheepskin Lined Palm; Edges Bound with Red Cloth; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 2½ lbs. . **$5 00**

Per Dozen

No. G25LW—Boys'; Left Hand; Selected Drab Color Sheepskin, Gray Felt Lined Fingers; Brown Sheepskin Lined Palm; Edges Bound with Red Cloth; Plain Seams; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 2½ lbs **$5.00**

Per Dozen

No. G25X—Boys'; Left Hand; Extra Quality Special Tanned Brown Sheepskin; Gray Felt Lined Throughout; Edges Bound with Red Cloth; Plain Seams; Patent Web Thumb; Strap and Button at Wrist, Specially Well Made; an Extra Quality Boys' 25 cent Glove, Weight per Dozen 2¼ lbs. **$5 70**

One Dozen in a Box

Any of the Above Numbers Not Listed Regularly in Right Hand We Can Furnish to Special Order, Direct from Factory, at Same Prices as Left Hand.

"DIAMOND EDGE IS A QUALITY PLEDGE"

FIELDERS' GLOVES

*DIAMOND BRAND

Back View, Showing Extra Large Hump Padding and Wrist Fastening Used on All of Our Better Grades of Fielders' Gloves.

LAJOIE AUTOGRAPH MODEL

Napoleon Lajoie, Cleveland American League, 1909
Record: Batting, .324; Fielding, .959

Per Dozen

No. G400—Left Hand; Finest Quality Drab Horsehide; Lined with Best Gray Wool Felt; Felt Padded; Seams Welted with Tan Calfskin; Edges Bound with Olive Napa Kid Leather; Strap and Button at Wrist; Fac Simile of Autograph on Each Glove; Weight per Dozen 9 lbs. . **$75 00**

PROFESSIONAL MODEL.

Per Dozen

No. G250—Left Hand; Very Fine Selected Pearl Grain Kip; Lined with California Napa Olive Green Kid; Felt Padded; Web Thumb; Seams Welted with Olive Napa Kid; Edges Bound with Olive Napa Kid; Strap and Button at Wrist; Very Highest Quality Throughout; Weight per Dozen 9 lbs. . **$47 00**

Extra Selected Drab Horsehide, Lined with California Napa Olive Green Kid; Felt Padded; Seams Welted with Tan Sheepskin; Edges Bound with Tan Sheepskin; Web Thumb Strap and Button at Wrist; Weight per Dozen 10½ lbs.

Per Dozen

No. G225—Left Hand $41 00

Extra Selected Orange Color Alaska Horsehide; Lined with California Napa Olive Green Kid; Felt Padded; Seams Welted with Tan Sheepskin; Edges Bound with Tan Sheepskin, Web Thumb; Strap and Button at Wrist; Weight per Dozen 10½ lbs.

Per Dozen

No. G225H —Left Hand $41 00
No. G225HRH Right Hand 41 00

Fine Quality Black Horsehide; Lined with Best Gray Wool Felt; Felt Padded; Seams Welted with Brown Tanned Sheepskin; Edges Bound with Brown Tanned Sheepskin; Web Thumb; Strap and Button at Wrist; Weight per Dozen 9¾ lbs.

Per Dozen

No. G200B—Left Hand $37 50

Extra Selected Drab Horsehide; Lined with Best Gray Wool Felt; Best Asbestos Extra Heavy Felt Padded; Seams Welted with Black Horsehide; Edges Bound with Black Sheepskin, Web Thumb, Strap and Button at Wrist, Weight per Dozen 9¾ lbs.

Per Dozen

No. G200D—Left Hand . . $37 50

Extra Selected Olive Green Grain Cowhide; Full Leather Lined with Brown Sheepskin; Best Asbestos Felt Padded; Seams Welted with Black Horsehide; Edges Bound with Black Sheepskin; Web Thumb, Strap and Button at Wrist; Weight per Dozen 9¾ lbs.

Per Dozen

No. G200G —Left Hand $37 50
No. G200GRH—Right Hand 37.50

Twelfth Dozen in a Box

Any of the Above Numbers Not Listed Regularly in Right Hand We Can Furnish to Special Order, Direct from Factory, at Same Prices as Left Hand.

"DIAMOND EDGE IS A QUALITY PLEDGE"

FIELDERS' GLOVES

*DIAMOND BRAND

Fine Quality Pearl Grain Cowhide; Full Lined with Olive Green California Napa Kid; Felt Padded; Seams Welted with Black Horsehide; Edges Bound with Brown Sheepskin; Web Thumb; Strap and Button at Wrist; Weight per Dozen 9 lbs.

Per Dozen

No. G175 —Left Hand..... $24 00
No. G175RH Right Hand..... 24 00

Fine Quality Black Grain Cowhide, Full Lined with Olive Green California Napa Kid; Felt Padded; Seams Welted with Brown Horsehide; Edges Bound with Brown Sheepskin; Web Thumb; Strap and Button at Wrist; Weight per Dozen 9 lbs.

Per Dozen

No. G175B—Left Hand.....$24 00

Good Quality Light Drab Genuine Horsehide; Lined with Best Gray Wool Felt; Felt Padded; Seams Welted with Green Horsehide; Edges Bound with Tan Color Sheepskin; Web Thumb; Strap and Button at Wrist; Weight per Dozen 8¾ lbs.

Per Dozen

No. G150 —Left Hand $20 00
No. G150RH—Right Hand 20 00

Fine Grade Wine Color Kid; Lined with Olive Green California Napa Kid; Felt Padded; Seams Welted with White Leather; All Edges Turned and Bound with Red Kid; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 9 lbs.

Per Dozen

No. G125—Left Hand..... $24.00

Fine Grade Black Color Kid; Lined with Olive Green California Napa Kid; Felt Padded; Seams Welted with White Leather; All Edges Turned and Bound with White Kid; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 9 lbs.

Per Dozen

No. G125B —Left Hand. $24.00
No. G125BRH—Right Hand. 24 00

Fine Grade Mocha Tanned Brown Kid; Lined with Best Gray Wool Felt; Felt Padded; Seams Welted with White Leather; Edges Bound with Brown Sheepskin; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 8¾ lbs.

Per Dozen

No. G100 —Left Hand. . . $19 00
No. G100RH—Right Hand... . . 19.00

Selected Olive Green California Napa Kid, Lined with Best Gray Wool Felt; Felt Padded, Seams Welted with Red Leather; Edges Bound with Red Sheepskin; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 8¾ lbs.

Per Dozen

No. G100G—Left Hand.. .....$19.00

Fine Grade Mocha Tanned Brown Kid; **Full Lined with Olive Green California Napa Kid;** Felt Padded; Seams Welted with Green Leather; Edges Bound with Black Imitation Leather; Patent Web Thumb; Strap and Button at Wrist; Weight per Dozen 8¾ lbs.

Per Dozen

No. G100Y Left Hand.. .....$19.00

Twelfth Dozen in a Box

Any of the Above Numbers Not Listed Regularly in Right Hand We Can Furnish to Special Order, Direct from Factory, at Same Prices as Left Hand.

"DIAMOND EDGE IS A QUALITY PLEDGE"

BASE BALL CLOTHING

*DIAMOND BRAND

We Require at Least 10 Days on all Orders

Diamond Base Ball Clothing is made up in best Workmanship and Manner, Double Seams, Reinforced and Stitched with Linen Thread. Pants Furnished Plain, Lined or Padded, Button Front and Elastic or Tape Bottoms. Shirts, Double Yoke and Collar, Long, Medium or Short Sleeves, Button or Lace Front.

In Ordering Mention Size, Color and Trimmings Wanted

NOTE.—Prices on Coats and Sweater Jackets or for Nine or More in Each Grade; for less Quantities add 10 per cent Net to Prices Given.

COATS

Single or Double Breasted; Sack or Blouse Pattern; this Garment has become very Popular and is Used by all Professional Ball Players; is Tailor Made in Best Workmanship and Manner throughout; Double Stitched and Tape Seams; Collar, Cuffs and Pockets Trimmed with Any Color Desired; Front Trimmed with Large Marine Pearl Buttons; Made up Unlined or Skeleton Style; Monogram or Letter on Top Pocket.

	Each
No. 00C—Same Material as No. 00 Uniforms	$20.50
No. 10C—Same Material and Colors as No. 10 Uniforms	16 00
No. 12C—Same Material as No. 12 Uniforms	15 50
No. 14C—Same Material as No. 14 Uniforms	13.00
No. 15C—Same Material as No. 15 Uniforms	12 00

SWEATER JACKETS

	Each
No. 6J—Best All Wool; Extra Heavy Shaker Knit; Colors and Grade to Match Nos. 00 and 10 Uniforms	$14 50
No. 12J—Heavy Wool; Colors and Grade to Match No. 12 Uniform	12.00
No. 13J—Heavy Wool; Colors and Grade to Match No. 13 Uniform	11.00
No. 14J—Heavy Wool; Colors and Grade to Match No. 14 Uniform	$8 40
No. 15J—Medium Weight Wool; Colors and Grade to Match No. 15 Uniform	7.20
No. 16J—Light Weight Wool; Colors and Grade to Match No. 16 Uniform	6 00
No. 17J Best Merino Yarn; Colors and Grade to Match No. 17 Uniform	4 80

Sample Color Cards and Measurement Blanks Furnished on Application

HOW TO ORDER UNIFORMS

Samples of Flannels and Special Measurement Blanks Mailed to Clubs and Others Interested on Application.

If in a Hurry for Uniforms and no Samples and Measurement Blanks on Hand, Follow the Instructions Given Below; Give us an Idea of Color Desired, and we will Use Our Judgment in Getting up Same. Our Experience for Years Past will Enable us in Most Cases to Make a Better Selection than Parties not Experienced in Selecting Materials and Trimmings for Uniforms.

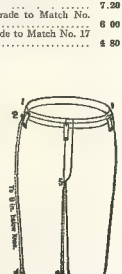
STYLE AND COLORS FOR UNIFORMS

Answer these Questions Fully Before Taking Measurements

1. Uniform No.
2. Style of Shirt and Lettering
3. Color Desired for Letters
4. Color of Belt and Stockings
5. Style and Color of Cap

HOW TO MEASURE FOR UNIFORMS

Measure Each Man Separately as Indicated by the Numbers Given and Shown on Diagrams. Use this Form as a Copy in Absence of Special Measurement Blanks.



Names	SHIRTS				PANTS				Cap, Size	Belts, Size	Hose, Size	Shoes, Size
	Collar	Sleeve, 2 to 4	Chest, 5 to 5	Yoke, 7 to 8	Around Waist, 1 to 1	Outseam, 2 to 4	Inseam, 5 to 6	Around Hips, 7 to 7				

UNIFORM ROLLS

For Base Ball Players, Bicycle Riders, Tennis Players and Athletes Generally. The Convenient Packing of Uniforms in a Manner that will not Wrinkle and Soil Same and to be Easily Carried is an Important Item to Every Player. These Rolls Answer all Requirements.

	Each
No. UC1—Heavy Brown Canvas, with Cloth Flaps to Fold Over and Protect Uniform; Russet Leather Straps and Handles; Made to Carry One Complete Uniform; Separate Compartment for Shoes; Weight Each About 1¾ lbs.	$5.00

One in a Package

"DIAMOND EDGE IS A QUALITY PLEDGE"

BASE BALL UNIFORMS

* DIAMOND BRAND

We Require at Least Ten Days on All Orders

All Made from the Very Best Material Obtainable in their Respective Grades; Especially Woven for Athletic Purposes. The Most Desirable Colors have been Selected, which, Combined with the High Standard of Workmanship, Enables us to Guarantee Satisfaction. Special Attention Given to Trimmings and Other Details in Designing.

NOTE. – Uniforms Consist of Shirt, Pants, Cap, Belt and Stockings, but no Shoes; Shoes are not Included in the Price of Uniforms. Send for Sample Cards of Flannel and Measurement Blank.

In Ordering Uniforms Mention Style Shirt Wanted, Whether Button or Lace Front; Style Pants Wanted, whether Plain or Padded, Elastic or Tape Bottom; Style Caps; Stockings, Color. When not Otherwise Specified, we will Send Button Front Shirt and Plain Pants with Elastic Bottoms.

COLLEGE

Colors: White, Yale Gray, Steel Gray, Scotch Gray, Pearl Gray, Oxford Brown, Maroon, Navy Blue and Dark Green.

Shirt; any Style. **Pants;** Plain or Lined and Padded. **Belt;** 2¼ inch Cotton Web. **Cap;** Boston, University or College Style. **Hose;** Plain or One Calf Stripe.

Per Uniform

No. 15—Made of Good Quality 5 ounce Athletic Flannel, Very Strong and Durable; Guaranteed to Give Satisfaction and to Outwear Any Other Make at the Price $13 00
When Ordering Nine or More Uniforms 12 00

Price Includes Name of Club on Shirt, Not to Exceed Ten Letters, or One 6 inch Plain or Old English Letter.

EXTRAS

Each

Felt Letters on Caps; $0.20
Piped Seams on Caps 20

AMATEUR

Colors: White, Silver Gray, Yale Gray, Gray Mixed, Pearl Gray, Navy Blue, Maroon, Oxford Brown and Green.

Shirt; Any Style. **Pants;** Plain Lined or Padded. **Belt;** 2¼ inch Cotton Web. **Cap;** Boston, University or College Style. **Hose;** Heavy Ribbed Cotton, Plain or 4 inch Fancy Color Band.

Per Uniform

No. 17—Made of Good Quality Flannel; a Very Desirable and Serviceable Uniform, Well Made $11 00
When Ordering Nine or More Uniforms 9 60

EXTRAS

Detachable Sleeves, Per Pair $1 10
Piped Seams on Caps, Each 20
Felt Letters on Caps 20

HIGH SCHOOL

Colors: White, Oxford Brown, Navy Blue, Royal Blue, Dark Gray, Light Gray, Scarlet, Purple and Green.
Shirt; Any Style. **Pants;** Plain Lined or Padded. **Belt;** 2½ inch Cotton Web. **Cap;** Boston, University or College Style. **Hose;** Heavy Cotton, Plain or One 4 inch Fancy Band on Leg.

Per Uniform

No. 18—Made of Flannel Finished Cloth and is a Very Desirable Uniform $9.60
When Ordering Nine or More Uniforms 8.40

EXTRAS

Each

Piped Seams on Caps $0.20
Felt Letters on Caps 20

JUNIOR

Colors: White, Oxford Brown, Navy Blue, Royal Blue, Dark Gray, Light Gray, Scarlet, Purple and Green.
Shirt; Button in Front. **Pants;** Plain. **Cap;** Jockey or College Style. **Hose;** Heavy Ribbed Cotton. **Belt;** 2 inch Web, Single Buckle.

Per Uniform

No. 19—Made of Heavy Flannelette; Well Made and an Excellent Outfit for Boys $8 00
When Ordering Nine or More Uniforms 7 20

BOYS'

Colors: White, Oxford Brown, Navy Blue, Royal Blue, Dark Gray, Light Gray, Scarlet, Purple and Green.
Shirt; Button in Front. **Pants;** Plain. **Cap;** Jockey or College Style. **Hose;** Heavy Ribbed Cotton. **Belt;** Two inch Web, Single Buckle.

Per Uniform

No. 21—Made of Good Flannelette in Boys' Sizes Only, Shirts up to and Including 14 inch Collar; Pants up to and Including 30 inch Waist . . . $5 40
When Ordering Nine or More Uniforms 4 80

UNIFORMS CARRIED IN STOCK

The Following Numbers of Uniforms are Carried in Stock. They will not be Made up to Special Order. Made in One **Color** Only; Suit Consists of Shirt, Pants, Cap and Belt; **Does Not Include Stockings or Shoes.** We do not Break Packages on these Uniforms. It is Necessary to Order One Dozen Suits of Assorted Sizes at One Time. We do not Pick Out Sizes. We Only Sell them Assorted.

Per Dozen Suits

No. 22—Boys' Size; 8 to 14 years, Gray with Navy Blue Collar and Cuffs $21.50
No. 23—Same as No. 22, Only Made of Better Material 32 50
No. 24—Men's Size; Gray with Navy Blue Collar and Cuffs 43 00

"DIAMOND EDGE IS A QUALITY PLEDGE"

*DIAMOND EDGE LATHING HATCHETS

HAND MADE, NON-RUSTING FORGE FINISH

Highest Grade Solid Crucible Steel; Perfectly Tempered Bit and Head; Carefully Ground and Sharpened, Ready for use, Full Polished and Etched; Second Growth Young Hickory Handle, Thoroughly Seasoned; Every Hatchet is Perfectly Hung. Much Care Being Exercised in Handling, Fastened with a *DIAMOND EDGE* Patent Lock Wedge which Prevents the Head Flying Off.

All Tools Bearing the *DIAMOND EDGE* Brand are fully Warranted and represent the Acme of Perfection in Tool Making

Wedge Used on *DIAMOND EDGE* Hatchets

Adze Eye; Round Neck and Poll Nine Rows of Checks on Face

Per Dozen

No. DEX40—Width of Cut 2¾ inches; Diameter of Face 1⅜ in.; Weight without Handle 10 ozs.; Weight per Dozen 18 lbs. **$18 00**

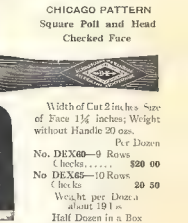
Half Dozen in a Box

Plain Eye; Square Poll Eight Rows of Checks on Face Checks Cut with Milling Machine

Per Dozen

No. DEX50—Width of Cut 2¾ inches; Size of Face 1⅝ in.; Weight without Handle 10 ozs.; Weight per Dozen 10 lbs. **$15 00**

Half Dozen in a Box



CHICAGO PATTERN Square Poll and Head Checked Face

Width of Cut 2 inches Size of Face 1¾ inches; Weight without Handle 20 ozs.

Per Dozen

No. DEX60—9 Rows Checks. **$20 00**

No DEX65—10 Rows Checks **20 50**

Weight per Dozen about 19 lbs

Half Dozen in a Box

*DIAMOND EDGE BOX HATCHETS

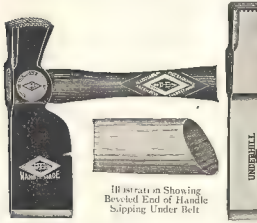


Illustration Showing Beveled End of Handle Slipping Under Belt

BOX HATCHETS

Flared Square Head; Convex, Checked Face

Highest Grade Forged Solid High Carbon Crucible Steel; Tempered Bit and Head; Extra Thin Blade

Per Dozen

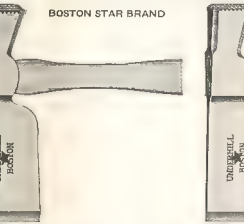
No. D75—Width of Cut 2 inches; Length of Hatchet 16 in.; Size of Face 1⅝ x 1⅝ inches; Length of Handle 12 inches; Weight without Handle ⅝ lb; Weight per Dozen 17 lbs. **$18.50**

Half a Dozen in a Box

UNDERHILL LATHING HATCHETS

GENUINE UNDERHILL BROS.

Forged Too. Steel, Tempered Bit; Hardened Head, Full Polished; Selected White Hickory Handle



BOSTON STAR BRAND

Per Dozen

No. 70—Boston Pattern; 8 Rows, 64 Points Checked on Face; Width of Cut 2 inches, Length 6¾ inches; Size of Face 1⅝x1⅝ inches Extra Thin Bit Ie, Weight without Handle ⅝ lb.; Weight per Dozen about 18 lbs. **$33 00**

No. 80—Chicago Pattern; 9 Rows, 81 Points Checked on Face; Width of Cut 2 inches, Length 6¾ inches; Size of Head 1⅝x1⅝ inches; Weight without Handle ⅝ lb.; Weight per Dozen about 18 lbs. **36 50**

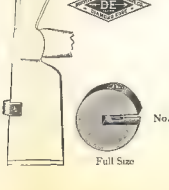
Half Dozen in a Box

Per Dozen

No 90 St. Paul Pattern; 9 Rows, 81 Points Checked on Face, Width of Cut 2 inches, Length 6¾ inches; Size of Face 1⅝x1⅝ inches; Weight without Handle 1 lb.; Weight per Dozen about 19 lbs. **$40 00**

No. 100—St. Louis Pattern; 10 Rows, 100 Points Checked on Face, Width of Cut 2 inches, Length 6¾ inches; Size of Head 1⅞x1⅞ inches, Weight without Handle 1 lb.; Weight per Dozen about 19 lbs. **46.00**

Half Dozen in a Box



Full Size

SHINGLE GUAGES

*DIAMOND EDGE

With Flush Slot Head, Screw Fastening

For Use with Thin Bit Lathing Hatchets

Will Gauge Shingles 4, 4½ and 5 inch to the Weather

Per Dozen

No. DE35 Cold Rolled Polished Steel, ¾ inch Diameter; 2 inch Thick; With Set of 4½ inch Wire and 5 inch Deep; Polished Head Screws; Weight Per Dozen ⅞ lb **$3 00**

One Dozen on Display Card in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*BRIDGE HATCHETS

FIRE BRONZE FINISH; POLISHED BIT AND FACE

Extra Quality, **Solid Crucible Cast Steel;** Carefully Tempered Bit and Head; Correctly Ground and Sharpened, Ready for Use; Solid Punched Eye; Extra Grade White Hickory Handle; Carefully Hung and Fitted; Fastened with a Patent Lock Wedge which Prevents the Head Flying Off.

Wedge Used on All Bridge Hatchets

SHINGLING

Octagon Poll, Plain Face

Nos.	BS1	BS2
Width of Cut, Inches	3½	4⅛
Weight per Dozen, Lbs.	20	24
Per Dozen	$9 00	9.50

CLAW

Square Poll, Plain Face

Nos.	BC1	BC2	BC3
Width of Cut, Inches	3½	3⅞	4⅛
Weight per Dozen, Lbs.	32	26	30
Per Dozen	$10.00	10.50	11.00

Half Dozen in a Box

BROAD

Octagon Poll, Plain Face, Curved Bit

Nos.	BB1	BB2	BB3	BB4	BB5
Width of Cut, Inches	4	4½	5	5½	6
Weight per Dozen, Lbs.	23	26	28	39	43
Per Dozen	$11.50	12.50	13.50	14.50	18.00

HALF

Octagon Poll, Plain Face

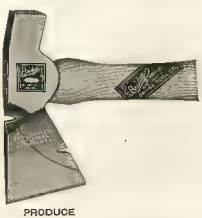
Nos.	BH1	BH2
Width of Cut, Inches	3⅛	3½
Weight per Dozen, Lbs.	18	23
Per Dozen	$9 50	10 00

LATHING

Octagon Poll, Checkered Face

Nos.	BL1	BL2	BL3
Width of Cut, Inches	2¼	2¾	3
Weight per Dozen, Lbs.	17	22	25
Per Dozen	$8.00	9.50	10.00

Half Dozen in a Box



PRODUCE

With Two Nail Slots, Square Poll, Checked Face

Per Dozen

No. B35—Width of Cut 1¾ in.; Size of Face 13-16x16-16 in.; Length of Head 6¾ in.; Length of Handle 11 in.; Weight Handled 1¼ lbs.; Weight per Dozen 15 lbs. $11.50

* DIAMOND EDGE HATCHETS

FULL POLISHED

Highest Grade Forged Solid High Carbon Crucible Steel; Carefully Tempered and Ground; Full Polished and Etched; Select, Second Growth Young Hickory Handle, Thoroughly Seasoned; Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling; Fastened with a DIAMOND EDGE Patent Lock Wedge which Prevents the Head Flying Off.

All Tools Bearing the DIAMOND EDGE Brand are Fully Warranted and Represent the Acme of Perfection in Tool Making.

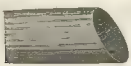
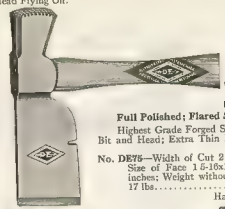


Illustration Showing Beveled End of Handle for Slipping Under Belt



Wedge Used on all DIAMOND EDGE Hatchets

BOX HATCHETS

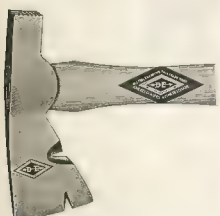
Full Polished; Flared Square Head; Convex, Checked Face

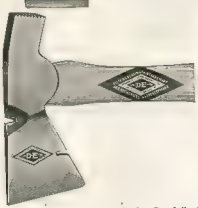
Highest Grade Forged Solid High Carbon Crucible Steel, Tempered Bit and Head; Extra Thin Blade.

Per Dozen

No. DE75—Width of Cut 2 inches; Length of Hatchet 6 inches; Size of Face 1 5-16x1 5-16 inches; Length of Handle 12 inches; Weight without Handle ⅞ lb.; Weight per Dozen 17 lbs. **$18.50**

Half Dozen in a Box





Highest Grade Forged Solid High Carbon Crucible Steel; Tempered Bit and Head. Carefully Ground and Sharpened. **Full Polished and Etched**

BARREL

Full Polished; Square Head, Two Nail Slots; Checked Face — Per Dozen

No. DE80—Size 1. Width of Cut 2⅝ in.; Size of Face ⅝x1 inch; Length of Head 6⅛ inches; Length of Handle 12 in.; Weight Handled 1¾ lbs; Weight per Dozen 19 lbs. **$11.50**

PRODUCE

Full Polished; Square Head; Two Nail Slots; Checked Face — Per Dozen

No. DE85—Curved Head; Width of Cut 1⅞ in. Size of Face 13-16x15-16 in.; Length of Head 5¾ in ; Length of Handle 11 in.; Wt. Handled 1⅜ lbs.; Weight per Dozen 16 lbs. . . . **$13.00**

Half Dozen in a Box

PRODUCE

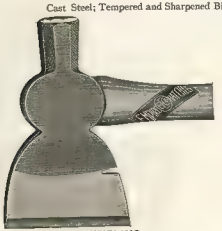
Full Polished; Square Head; Two Nail Slots; Checked Face — Per Dozen

No. DEX85—Straight Head; Width of Cut 1⅞ in.; Size of Face ⅞x1 in ; Length of Head 5 in; Length of Handle 10½ in.; Wt. Handled ⅞ lb ; Wt. per Doz. 12 lbs. **$11.00**

EMPIRE HATCHETS

FIRE BRONZE AND LABELED; POLISHED BIT AND FACE

Cast Steel; Tempered and Sharpened Bit; Hardened Head; Well Shaped, Seasoned No. 2 Hickory Handle



SHINGLING

Octagon Poll, Plain Face

	ES1	ES2
Nos.	3½	3½
Width Cut, Inches	19	24
Weight per Dozen, Lbs	$5.55	5.70
Per Dozen		

Half Dozen in a Box

PRODUCE

Per Dozen

No. EP—Straight Head; Width of cut 2 inches; Size of face 5/8x5/8 Length of Head 6¾ inches; Length of Handle 10 inches; Weight handled, 13 ozs.; Weight per dozen, 10 pounds..... **$7 00**

DIAMOND EDGE HATCHETS

FULL POLISHED AND ETCHED

Highest Grade Solid Crucible Cast Steel; Perfectly Tempered Bit and Head; Carefully Ground and Sharpened Ready for Use; Solid Punched Eye; Full Polished and Etched.

Select, Second Growth Young Hickory Handle; Thoroughly Seasoned. Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling: Fastened with a DIAMOND EDGE Patent Lock Wedge Which Prevents the Head Flying Off.

All Tools Bearing the DIAMOND EDGE Brand are Fully Warranted, and Represent the Acme of Perfection in Tool Making Any which May Prove Defective will be Cheerfully Replaced.

SHINGLING

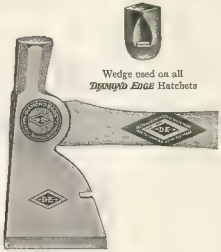
Plain Eye; Octagon Poll; Plain Face

Nos.	DPS1	DPS2
Width Cut, Inches	3½	3⅝
Weight per Dozen, Lbs.	23	28
Per Dozen	$11 00	11.50

CLAW

Plain Eye; Square Poll; Plain Face

Nos.	DPC1	DPC2
Width Cut, Inches	3½	3⅝
Weight per Dozen, Lbs	23	28
Per Dozen	$12.00	12.50



Wedge used on all DIAMOND EDGE Hatchets

HALF

Plain Eye; Octagon Poll; Plain Face

Nos.	DPH1	DPH2
Width Cut, Inches	3½	3½
Weight per Dozen, Lbs	21	24
Per Dozen	$11 50	12 00

Half Dozen in a Box; Two Dozen in a Case; Average Weight per Case 55 lbs.

*DIAMOND EDGE—HAINES PATTERN

Full Polished and Etched

Highest Grade Forged, Solid High Carbon, Crucible Steel; Full Polished and Etched. Select, Second Growth Young Hickory Handle, Thoroughly Seasoned. Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling. Perfectly Tempered Bit and Head; Carefully Ground and Sharpened

SHINGLING

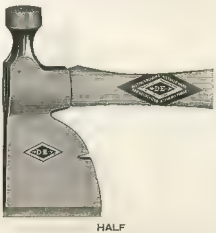
Adze Eye; Round Poll; Bell Face

Nos.	HX1	HX2
Width Cut, Inches	3	3½
Weight Less Handle, Ozs.	16	20
Weight per Dozen, Lbs.	20	22
Per Dozen	$17 00	17.50

HALF

Adze Eye; Round Poll; Bell Face

Nos.	HO1	HO2
Width Cut, Inches	3	3½
Weight Less Handle, Ozs	14	18
Weight per Dozen, Lbs	19	21
Per Dozen	$17 00	17.50



HALF

Adze Eye; Round Poll; Checked Bell Face

No.	HC2
Width Cut, Inches	3½
Weight Less Handle, Ozs	18
Weight per Dozen, Lbs.	21
Per Dozen	17.50

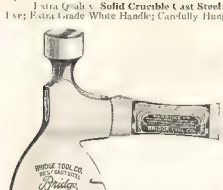
Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*BRIDGE HATCHETS

FULL POLISHED

Extra Quality; Solid Crucible Cast Steel; Carefully Tempered Bit and Head; Correctly Ground and Sharpened, Ready for Use; Solid Punched Eye; Extra Grade White Handle; Carefully Hung and Fitted; Fastened with a Patent Lock Wedge which Prevents the Head Flying Off



SHINGLING

Adze Eye; Round Poll; Bell Face.

Nos.	BX1	BX2
Width Cut, Inches	3	3½
Weight Less Handle, Ozs.	16	20
Weight per Dozen Lbs.	20	22
Per Dozen	$16.00	$17.00

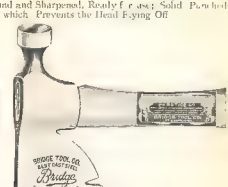
Half Dozen in a Box

HALF

Adze Eye; Round Poll; Checked Bell Face

Nos.	BCX2
Width Cut, Inches	3½
Weight Less Handle, Ozs.	18
Weight per Dozen, Lbs.	21
Per Dozen	$17 00

Half Dozen in a Box

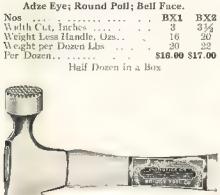


HALF

Adze Eye; Round Poll; Bell Face

Nos.	BO1	BO2
Width Cut, Inches	3	3½
Weight Less Handle, Ozs.	14	18
Weight per Dozen, Lbs.	19	21
Per Dozen	$16.00	$17 00

Half a Dozen in a Box



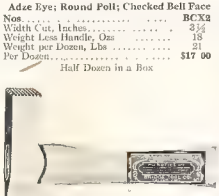
LATHING

Adze Edge; Round Neck and Poll
Nine Rows of Checks on Face

Per Dozen

No. B40—Width of Cut 2¾ inches Diameter of Face 1⅝ inches; Weight without Handle 10 ozs; Weight per Dozen 10 lbs. $17 00

Half a Dozen in a Box



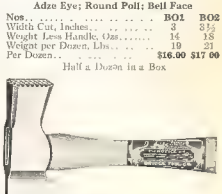
LATHING

Plain Eye, Square Poll, Eight Checks on Face; Checks Cut with Milling Machine.

Per Dozen Size

No. B50—Width of Cut 2¼ Inches; Size of Face 1x⅝ inch; Weight without Handle 10 ozs; Weight per Dozen 16 lbs. $13 00

Half Dozen in a Box



LATHING

Chicago Pattern; Square Head and Poll; Checked Face; Width of Cut 2 inches, Size of Face ⅞ inches, Weight without Handle 20 ozs. **Checks Cut with Milling Machine.**

Per Dozen

No. B60—9 Rows of Checks. $18 00
No. B65 16 Rows of Checks. 19 00

Weight per Dozen About 19 lbs.

Half Dozen in a Box

BOX HATCHET

Flared Square Head; Convex Checked Face

Tempered Bit and Head

Extra Thin Blade

Per Dozen

No. B75 Width of Cut 2 inches Length of Head 6 inches; Size of Face 1⅝x1⅝ inch, Length of Handle 12 inches; Weight without Handle 7½ lbs.; Weight per Dozen 17 lbs. $17 50

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*DIAMOND EDGE HATCHETS

NICKEL PLATED AND ETCHED

Highest Grade Solid Crucible Cast Steel; Perfectly Tempered Bit and Head; Carefully Ground and Sharpened, Ready for Use; Hardened Head, Solid Punched Eye, Nickel Plated and Etched; Select Second Growth Young Hickory Handle, Thoroughly Seasoned. Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling, Fastened with a *DIAMOND EDGE Patent Lock Wedge which Prevents the Head Flying Off.

All Tools Bearing the *DIAMOND EDGE Brand are Fully Warranted and Represent the Acme of Perfection in Tool Making

Wedge Used on All *DIAMOND EDGE Hatchets

NICKEL PLATED

Plain Eye; Octagon Neck, Round Poll and Head; Bell Face; Selected Hickory Handle

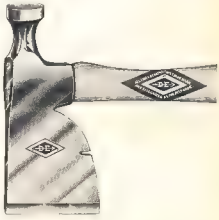
SHINGLING		HALF		
No.	NO2	No.	NOH1	NOH2
Width Cut, Inches	4	Width Cut, Inches	3	3½
Weight per Dozen, Lbs.	24	Weight per Dozen, Lbs	24	24
Per Dozen	$17.00	Per Dozen	$17.00	$17.50

Half Dozen in a Box

*DIAMOND EDGE HAINES PATTERN

Nickel Plated and Etched

Highest Grade Forged Solid Crucible High Carbon Steel; Perfectly Tempered Bit and Head; Carefully Ground and Sharpened, Ready for Use; Solid Punched Eye; Nickel Plated and Etched; Select, Second Growth Young Hickory Handle, Thoroughly Seasoned. Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling



NICKEL PLATED

Adze Eye; Round Poll and Head; Bell Face; Selected Hickory Handle

SHINGLING		HALF	
No.	N2	No.	HN2
Width Cut, Inches	3½	Width Cut, Inches	3½
Weight per Dozen, Lbs.	22	Weight per Dozen, Lbs	21
Per Dozen	$20.50	Per Dozen	$20.00

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*DIAMOND EDGE HATCHETS

Highest Grade Solid Crucible Cast Steel; Perfectly Tempered Bit and Head; Hand Forged and Hand Finished; Sharpened Ready for use; Solid Punched Eye; Select Second Growth, Young Hickory Handle, Thoroughly Seasoned; Every Hatchet is Perfectly Hung; Much Care being Exercised in Handling; Fastened with a Diamond Edge, Patent Lock Wedge, which Prevents the Head Flying Off.

BROAD OR BENCH

Edge View of Double Bevel Bench Hatchet

FLOORING

Gold Bronze and Labeled Body; Polished Cured Bit and Head; Single Bevel; Selected White Hickory Handle

Nos.	DB1	DB2	DB3	DB4	DB5	DB6
Width Cut, Inches	4	4¼	5	5½	6	6½
Weight Handled, Lbs	2¼	2¾	3¼	3¾	4¼	5
Weight per Dozen, Lbs	23	29	33	40	44	49
Per Dozen	$13 00	14. 00	16.00	18 50	21 00	22 50

Double Bevel

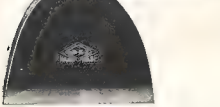
Nos.	DBD3	DBD4	DBD5
Width Cut, Inches	5	5½	6
Weight Handled, Lbs	3¼	3¾	4¼
Weight per Dozen, Lbs	33	40	44
Per Dozen	$16.00	18 50	21.00

Half Dozen in a Box

Gold Bronze and Labeled Body; Polished Bit and Head, Single Bevel; Selected White Hickory Handle

Nos.	DF1	DF2	DF3
Width Cut, Inches	3⅞	4⅜	4⅞
Size Face, Inches	1⅝x1	1⅝x1⅜	2x1⅜
Weight Each, Lbs	2¼	2¾	3
Weight per Dozen, Lbs	22	36	40
Per Dozen	$12.00	13.00	14 50

Half Dozen in a Box



Wedge Used on all *DIAMOND EDGE Hatchets.

Hand Made; Non-Rusting Dead Black Smooth Forge Finish; Polished Face and Bevel

Single Bevel — Green Mission Finish Handle

Nos.	DEB1	DEB2	DEB3	DEB4	DEB5
Width Cut, Inches	4	4¼	5	5½	6
Weight per Dozen, Lbs	34½	35½	40	45	48
Per Dozen	$12 50	14.50	16.00	18 50	21.00

Half Dozen in a Box

Hand Made, Non-Rusting Dead Black Smooth Forge Finish; Polished Face and Bevel

Single Bevel

Nos.	DFF1	DFF2	DFF3
Width Cut, Inches	3⅞	4¼	4¾
Size Face, Inches	1⅝x1	1¾x1	2⅛x1¼
Weight Each, Lbs	2	2⅜	3
Weight per Dozen, Lbs	26	31	39
Per Dozen	$13 75	15 50	18 50

Half Dozen in a Box

MOUND CITY TRADE MARK

*MOUND CITY HATCHETS

MOUND CITY TRADE MARK

GOLD BRONZED AND LABELED BODY; POLISHED BIT AND FACE

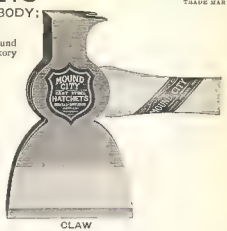
Cast Steel; Carefully Tempered and Ground Bit; Hardwood Head; No. 1 White Hickory Polished Handled; Carefully Wedged.

SHINGLING

Octagon Poll, Plain Face

Nos	MCS1	MCS2	MCS3
Width Cut, Inches	3⅛	4¼	
Weight per Dozen, Lbs	20	23	29
Per Dozen	$8 00	8.50	9.00

Half Dozen in a Box



CLAW

Square Poll, Plain Face

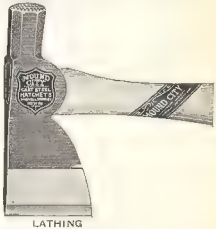
Nos	MCC1	MCC2
Width Cut, Inches	3⅛	3⅞
Weight per Dozen, Lbs	21¼	25
Per Dozen	$8 00	9 00

HALF

Octagon Poll, Plain Face

Nos	MCH1	MCH2
Width Cut, Inches	3¼	3⅝
Weight per Dozen, Lbs	19	23½
Per Dozen	$8.00	8.50

Half Dozen in a Box



LATHING

Octagon Poll, Checkered Face

Nos	MCL1	MCL2
Width Cut, Inches	2¼	2½
Weight per Dozen, Lbs	17¼	19½
Per Dozen	$8.00	8.50

Half Dozen in a Box

*MIZZOO HATCHETS

SHINGLING

Solid Cast Steel; **Black Finish;** Polished Bit and Face; Hardwood Handle.

Per Dozen

No. M2—3¼ inch Cut; Weight per Dozen 20 lbs..... $5.40

Half Dozen in a Box

CAST IRON HATCHETS

Solid **Cast Iron;** Ground and Sharpened Bit; Hardwood Handle

SHINGLING

Per Dozen

No. 1—**Gold Bronzed;** 3¼ inch Cut; Weight per Dozen 12 lbs **$2.40**

No. 2—**Gold Bronzed;** 3½ inch Cut; Weight per Dozen 15 lbs **3 00**

No. S2—**Painted Red, Nickel Plated Blade;** 3½ inch Cut; Weight per Dozen 14 lbs..... **3.60**

CLAW

Per Dozen

No. C2—**Painted Red, Nickel Plated Blade;** 3½ inch Cut; Weight per Dozen 15 lbs..... **$4 20**

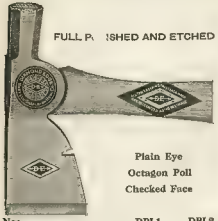
Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*DIAMOND EDGE LATHING HATCHETS

Highest Grade Solid Crucible Steel; Perfectly Tempered Bit and Head; Carefully Ground and Sharpened, Ready for Use; Full Polished and Etched; Second Growth, Young Hickory Handle, Thoroughly Seasoned; Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling; Fastened with a *DIAMOND EDGE Patent Lock Wedge which Prevents the Head Flying Off.

Wedge Used on *DIAMOND EDGE Hatchets



FULL P[illegible]ISHED AND ETCHED

Plain Eye
Octagon Poll
Checked Face

Nos.	DPL1	DPL2
Width Cut, Inches	2¼	2½
Weight Less Handle, Ozs.	19	24
Weight per Dozen, Lbs.	20	22
Per Dozen	$11.50	13.00

FULL POLISHED AND ETCHED
High Carbon Steel

Adze Eye
Round Neck and Poll
Nine Rows of Checks on Face

Per Dozen
No. DE40—Width of Cut 2¾ inches; Diameter of Face 1 3-16 inches; Weight without Handle 16 ozs.; Weight per Dozen 18 lbs. $18.00
Half Dozen in a Box

FULL POLISHED AND ETCHED
High Carbon Steel

Plain Eye
Square Poll
Eight Rows of Checks on Face
Checks Cut with Milling Machine

Per Dozen
No. DE50—Width of Cut 2¼ inches; Size of Face 1x15-16 inches; Weight without Handle 10 ozs.; Weight per Dozen 16 lbs. $15.00

FULL POLISHED AND ETCHED
High Carbon Steel

CHICAGO PATTERN
Square Poll and Head
Checked Face

Width of Cut 2 inches
Size of Face 1¼ inches
Weight without Handle 20 ozs.
Checks Cut with Milling Machine

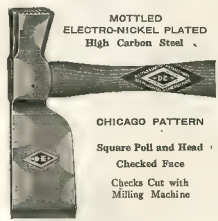
Per Dozen
No. DE60—9 Rows Checks $20.00
No. DE65—10 Rows Checks 20.50
Weight per Dozen about 19 lbs.
No. DE60H—With Extra Heavy Handle; Otherwise Same as No. DE60 20.50
Weight per Dozen about 21 lbs.
No. DE70—11 Rows Checks; Size of Face 1¾x1⅛ in. 19.50
Weight per Dozen 24 lbs.

FULL POLISHED AND ETCHED
High Carbon Steel

CHICAGO PATTERN
With Nail Slot
Square Poll and Head
Checked Face

Checks Cut with Milling Machine

Per Dozen
No. DE60X—9 Rows Checks on Face; Width of Cut 2 inches; Weight without Handle 20 ozs.; Weight per Dozen about 19 lbs. $21.50
Half Dozen in a Box



MOTTLED ELECTRO-NICKEL PLATED
High Carbon Steel

CHICAGO PATTERN
Square Poll and Head
Checked Face

Checks Cut with Milling Machine

Per Dozen
No. DEM60—9 Rows Checks on Face; Size of Face 1¼ inches; Width of Cut 2 inches; Weight without Handle 20 ozs.; Weight per Dozen about 19 lbs. $26 50

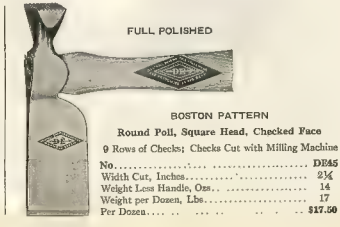
FULL NICKEL PLATED AND POLISHED

CHICAGO PATTERN
Square Poll and Head Checked Face

9 Rows of Checks; Checks Cut with Milling Machine

No.	DEN60
Width Cut, Inches	2¼
Weight Less Handle, Ozs.	16
Weight per Dozen, Lbs.	18
Per Dozen	$22.50

Half Dozen in a Box



FULL POLISHED

BOSTON PATTERN
Round Poll, Square Head, Checked Face

9 Rows of Checks; Checks Cut with Milling Machine

No.	DE45
Width Cut, Inches	2¼
Weight Less Handle, Ozs.	14
Weight per Dozen, Lbs.	17
Per Dozen	$17.50

*DIAMOND EDGE HATCHETS

GOLD BRONZE FINISH

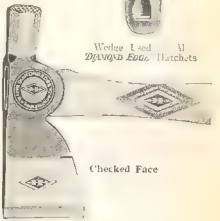
Highest Grade Solid Crucible Cast Steel; Perfectly Tempered Bit and Head, Carefully Ground and Sharpened, Ready for Use. Solid Punched Eye Set in Second Growth Young Hickory Handle, Thoroughly Seasoned, Every Hatchet Perfectly Hung, Much Care Being Exercised in Handling; Fastened with a *DIAMOND EDGE* Patent Lock Wedge which Prevents the Head Flying off.

OCTAGON POLL

Bronzed and Labeled Body; Polished Bit and Head

Plain Face

Plain Face



Checked Face

Wedge Used in *DIAMOND EDGE* Hatchets

SHINGLING				
Nos.	DS0	DS1	DS2	DS3
Width Cut, Inches.	3	3¼	3½	4⅜
Wt. per Doz., Lbs.	15	25	27½	32
Per Dozen	$9 00	10 00	10 50	11 00

HALF			
Nos.	DH1	DH2	DH3
Width Cut, Inches.	3¼	3½	3¾
Wt. per Doz., Lbs.	21	27	32
Per Dozen	$10 50	11 00	11 50

Half Dozen in a Box

LATHING			
Nos.	DL1	DL2	DL3
Width Cut, Inches	2¼	2½	3
Wt. per Doz., Lbs.	20	25	30
Per Dozen	$10.00	10 50	11 00

Octagon Neck, Round Poll, Bell Face; Adze Eye

Bronzed and Labeled; Polished Bit and Head.

Octagon Neck, Round Poll, Bell Face; Adze Eye

Bronzed and Labeled; Polished Bit and Head.

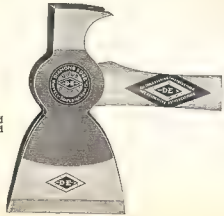
Bronzed and Labeled; Polished Bit and Head, Checked Face.

SHINGLING		
Nos.	DE01	DE02
Width Cut, Inches	3½	3¾
Weight per Dozen, Lbs	24	27
Per Dozen	$12 50	13 00

HALF			
Nos.	DEOH1	DEOH2	DEOH3
Width Cut, In.	3¼	3½	4
Wt. per Doz., Lbs.	22	26	28
Per Dozen	$13 00	13 50	14 00

Half Dozen in a Box

HALF	
Nos.	DECH3
Width of Cut, Inches	3
Weight per Dozen, Lbs	28
Per Dozen	$13.00



Square Head With Claw

Bronzed and Labeled; Polished Bit and Head.

CLAW

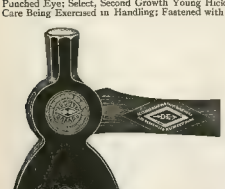
Nos.	DC1	DC2	DC3
Width Cut, Inches	3½	4¼	4⅝
Weight per Dozen, Lbs	25	27	31
Per Dozen	$11 00	11 50	12 00

"DIAMOND EDGE IS A QUALITY PLEDGE"

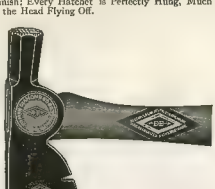
*DIAMOND EDGE HATCHETS

HAND MADE; NON-RUSTING FORGE FINISH

Highest Grade Solid Crucible Cast Steel; Perfectly Tempered Bit and Head; Hand Forged and Hand Finished; Sharpened Ready for Use; Solid Punched Eye; Select, Second Growth Young Hickory Handle, Thoroughly Seasoned; Green Mission Finish; Every Hatchet is Perfectly Hung, Much Care Being Exercised in Handling; Fastened with a Diamond Edge Patent Lock Wedge which Prevents the Head Flying Off.



Wedge Used on All *DIAMOND EDGE Hatchets



SHINGLING
Octagon Poll; Plain Face

Nos.	DES0	DES1	DES2	DES3
Width Cut, In..	3	3½	4	4½
Wt. Doz., Lbs..	15	23	28	32
Per Dozen....	$9.50	10.00	10.50	11.00

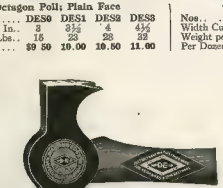
HALF
Octagon Poll; Plain Face

Nos.	DEH1	DEH2	DEH3
Width Cut, Inches.....	3½	3⅝	4
Weight per Dozen, Lbs..	22	26	30
Per Dozen.....	$10.50	11.00	11.50

LATHING
Octagon Poll; Checked Face

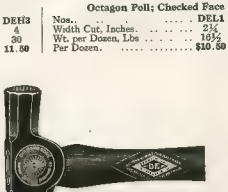
Nos..	DEL1	DEL2
Width Cut, Inches..	2¼	2½
Wt. per Dozen, Lbs	16½	23
Per Dozen.	$10.50	11.00

Half Dozen in a Box



CLAW
Square Poll; Plain Face

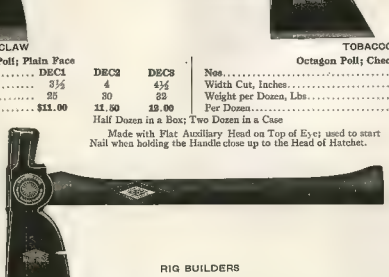
Nos.	DEC1	DEC2	DEC3
Width Cut, Inches..	3½	4	4½
Weight per Dozen Lbs..	25	30	32
Per Dozen..	$11.00	11.50	12.00



TOBACCO
Octagon Poll; Checked Face

Nos.	DET3
Width Cut, Inches..	3½
Weight per Dozen, Lbs..	30
Per Dozen..	$12.50

Half Dozen in a Box; Two Dozen in a Case



Made with Flat Auxiliary Head on Top of Eye; used to start Nail when holding the Handle close up to the Head of Hatchet.

*DIAMOND EDGE Tools are Recognized as the Best Made and Represent the Acme of Perfection in Tool Making. Any which May Prove Defective will be Cheerfully Replaced.

RIG BUILDERS

For Use in Derrick, Scaffold and Bridge Building

Fitted with **Extra Long Handle with Swelled End,** Affording a Longer Reach and Greater Swing, with Less Chance of the Tool Dropping or Slipping from the Hand; this Tool is Very Desirable on Jobs High above the Ground, Where There is Nothing to Stop or Catch a Dropped Tool. Per Dozen

No. DER3—3 inch Cut; 18 inch Handle; Octagon Poll; Checkered Face; Plain Eye; Weight Less Handle 2 lbs.; Weight per Dozen 37 lbs..... $14.50

Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

*DIAMOND EDGE BLOCK PLANES

Refined Cast Iron Frame and Cap; Highest Grade English Tool Steel Thin Bit Cutter; Oil Tempered, Ground and Hand Sharpened

ADJUSTABLE THROAT

The Throat Can be Quickly Opened or Closed for Fine or Coarse Work, by a Movement of the Cam Lever at Nose

REGULAR

Japanned Top, Cap and Trimmings; Polished Face and Sides; Brass Adjusting Nuts.

	Each
No. DE9½—6 inches Long; 1⅝ inch Cut; Weight 1⅝ lbs	**$1.40**
No. DE15—7 inches Long; 1⅝ inch Cut; Weight 1⅝ lbs	**1.50**
No. DE16—Nickel Plated Trimmings; 6 in. Long; 1⅝ in. Cut; Weight 1½ lbs.	**1.60**

KNUCKLE JOINT

Japanned Top; Polished Face and Sides; Nickel Plated Brass Adjusting Nuts.

	Each
No. DEX15—6¼ inches Long; 1⅝ inch Cut; Weight 1⅝ lbs	**$1.60**

LOW ANGLE

Japanned Top; Polished Face and Sides; Nickel Plated Cap and Nuts.

	Each
No. DEX60—6 inches Long; 1⅝ inch Cut; Weight 1⅝ lbs	**$1.50**
No. DEX65—7 inches Long; 1⅝ inch Cut; Weight 1⅝ lbs	**1.70**

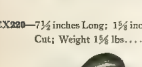
ADJUSTABLE

NON-ADJUSTABLE

DOUBLE END, NON-ADJUSTABLE

Japanned Top and Cap; Polished Face and Sides; Beechwood Knob

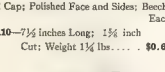
	Each
No. DEX220—7½ inches Long; 1⅝ inch Cut; Weight 1⅝ lbs	**$0 80**
No. DE110—7½ inches Long; 1⅝ inch Cut; Weight 1¼ lbs	**$0.60**
With Two Slots and Reversible Cutter Seat **No. DEX130**—8 inches Long; 1⅝ inch Cut; Weight 1¾ lbs	Each **$0 80**



No. 103

Japanned Top and Cap; Polished Face and Sides.

	Each
5½ inches Long; 1¾ inch Cut	
No. DE102—Non-adjustable	**$0.50**
No. DE103—Adjustable	**.60**
Weight about ¾ lb.	

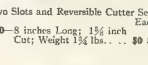


WITH HANDLE

Japanned Top, Cap and Handle; Ground Face; Not Adjustable.

	Each
No. DE100—3½ inches Long; 1 inch Cut; Weight 3½ lb.	**$0.80**

All Above, One in a Box

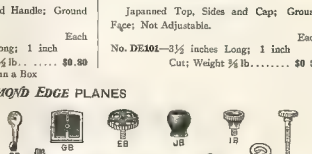


WITHOUT HANDLE

Japanned Top, Sides and Cap; Ground Face; Not Adjustable.

	Each
No. DE101—3½ inches Long; 1 inch Cut; Weight ¾ lb	**$0 30**

*EXTRA PARTS FOR *DIAMOND EDGE* PLANES



In Ordering, Always Give Kind and Number of Plane for Which Part is Wanted, as Well as the Figure Number of the Part Wanted. Ten Cents will be the Minimum Charge for Any Part Sent by Mail.

FINISHED PARTS FOR *DIAMOND EDGE* BENCH PLANES

Fig. A—Single Plane Iron
Fig. B—Top Plane Iron
Fig. C—Plane Iron Screw
Fig. D—Cap
Fig. E—Cap Screw
Fig. F—Frog Only
Fig. G—Y Adjustment
Fig. H—Brass Adjusting Nut
Fig. I—Lever Only
Fig. J—Frog Screw
Fig. K—Frog Complete
Fig. L—Handle for Iron Plane
Fig. M—Handle for Wood Plane
Fig. N—Knob
Fig. O—Handle Bolt
Fig. P—Knob Bolt
Fig. Q—Handle Screw
Fig. R—Iron Plane Bottom
Fig. S—Top Casting for Wood Plane
Fig. T—Bottom for Wood Plane

FINISHED PARTS FOR *DIAMOND EDGE* BLOCK PLANES

Fig. AB—Plane Iron
Fig. BB—Cap Only
Fig. CB—Cap Screw
Fig. DB—Cap Lever
Fig. EB—Adjusting Nut
Fig. FB—Bottom
Fig. GB—Extension Nose
Fig. HB—Eccentric Plate
Fig. IB—Iron Knob
Fig. JB—Wood Knob
Fig. KB—Adjusting Frog
Fig. LB—Adjusting Frog
Fig. MB—Lateral Lever
Fig. NB—Adjusting Screw
Fig. OB—Adjustment Dog
Fig. PB—Lever Screw

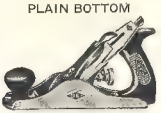
"*DIAMOND EDGE IS A QUALITY PLEDGE"

*DIAMOND EDGE BENCH PLANES

IRON, ADJUSTABLE

Black Enameled Cast Iron Frames; Face of Bottom and Sides Ground True and Smooth; Composition Rubber Handle, Ebonized Wood Knob; Full Polished Cap and Cutters; Highest Grade English Tool Steel, Thin Bit Cutters; Oil Tempered, Ground and Hand Sharpened; Screw and Lever Adjustment; Brass Screw.

PLAIN BOTTOM



SMOOTH

	Each
No. DE3 — 8 inches Long, 1¾ inch Cut; Weight 3¼ lbs.....	$2 80
No. DE4 — 9 inches Long, 2 inch Cut; Weight 3½ lbs.....	3 10
No. DE4½—10 inches Long, 2⅜ inch Cut; Weight 3¾ lbs.....	3 60

JACK

	Each
No. DE5 — 14 inches Long; 2 inch Cut, Weight 4⅞ lbs.....	$3 60
No. DE5½—15 inches Long, 2⅛ inch Cut, Weight 6¼ lbs.....	3 90

FORE

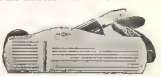
No. DE6 —18 inches Long; 2¾ inch Cut; Weight 7¼ lbs.....	4 00

JOINTER

No. DE7 — 22 inches Long; 2¾ inch Cut; Weight 7⅞ lbs.....	5 30
No. DE8 — 24 inches Long; 2⅝ inch Cut; Weight 9¾ lbs.....	6 20

CORRUGATED BOTTOM

The Corrugated Bottom Lessens Friction and Makes an Easier Running Tool than the Smooth Bottom Plane.



SMOOTH

	Each
No. DEC3 — 8 inches Long; 1¾ inch Cut; Weight 3¼ lbs	$2 90
No. DEC4 — 9 inches Long; 2 inch Cut; Weight 3½ lbs	3 10
No. DEC4½—10 inches Long; 2⅜ inch Cut; Weight 5½ lbs.....	3 60

JACK

	Each
No. DEC5 — 14 inches Long, 2 inch Cut; Weight 4¾ lbs .	$3 60
No. DEC5½—15 inches Long; 2⅛ inch Cut; Weight 6¼ lbs .	3 90

FORE

No. DEC6 —18 inches Long; 2¾ inch Cut; Weight 7¼ lbs.....	4 00

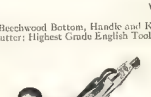
JOINTER

No. DEC7 — 22 inches Long; 2⅞ inch Cut; Weight 7⅞ lbs.....	5 30
No. DEC8 —24 inches Long; 2⅝ inch Cut; Weight 9¾ lbs	6 20

All Above, One in a Box

WOOD BOTTOM ADJUSTABLE

Selected Clear Beechwood Bottom, Handle and Knob; Perfectly Smooth and True Face; Polished Sides. Black Enameled Cast Iron Frame; Full Polished Cap and Cutter; Highest Grade English Tool Steel, Thin Bit Cutters; Oil Tempered, Ground and Hand Sharpened; Screw and Lever Adjustment; Brass Screw.

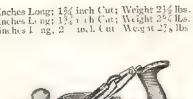


SMOOTH

	Each
No. DE22—8 inches Long; 1¾ inch Cut; Weight 2½ lbs.....	$1 90
No. DE23—9 inches Long; 1¾ inch Cut; Weight 2⅝ lbs.....	1 90
No. DE24—8 inches Long, 2 inch Cut; Weight 2⅞ lbs	1 90

HANDLED SMOOTH

	Each
No. DE35— 9 inches Long; 2 inch Cut, Weight 3¼ lbs	$2 20
No. DE36—10 inches Long, 2⅜ inch Cut, Weight 4½ lbs .	2 50

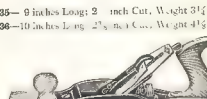


JACK

	Each
No. DE26 — 15 inches Long; 2 inch Cut; Weight 3¾ lbs .	$2 00
No. DE27 —15 inches Long; 2⅛ inch Cut, Weight 4¼ lbs .	2 20
No. DE27½—15 inches Long, 2⅛ inch Cut; Weight 5¼ lbs .	2 20

FORE

No. DE28—18 inches Long, 2¾ inch Cut; Weight 5½ lbs.....	2 50
No. DE29—20 inches Long, 2¾ inch Cut, Weight 7¾ lbs	2 50



JOINTER

	Each
No. DE31 — 24 inches Long; 2⅝ inch Cut; Weight 5⅞ lbs .	$2 70
No. DE32—26 inches Long, 2⅝ inch Cut; Weight 7 lbs	2 90
No. DE33—28 inches Long; 2⅝ inch Cut; Weight 7¾ lbs .	2 90
No. DE34—30 inches Long; 2⅝ inch Cut; Weight 8¼ lbs.....	3 10

All Above, One in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

BROAD AXES

Used for Hewing and Shaping Large Timbers, by Ship and Bridge Carpenters, Tie Makers, etc.

*DIAMOND EDGE

Highest Grade Refined Crucible Tool Steel; Perfectly Welded and Tempered; Accurately Shaped, Beveled and Ground; Highly Polished; Correctly Balanced. Made to Withstand Hard Usage and to Give the Best Results.

*DIAMOND EDGE Tools are Recognized as Being the Best Made, and Represent the Acme of Perfection in Tool Making. Any Which May Prove Defective will be Cheerfully Replaced.

Warranted to Withstand the Hardest Usage

Gold Bronzed and Labeled; Polished Bit and Head

No. DE20—CANADA PATTERN

Weights Ass'd, Lbs.	5⅝ to 6⅛	6⅛ to 7⅛	7 to 8	7⅛ to 8⅛
Width Cut, Inches	10 to 11	11⅛ to 12	12 to 12½	12½ to 13
Weight Dozen, Lbs.	84	97	103	106
Per Dozen	**$41.00**	**42.00**	**44.00**	**46.00**

No. DE25—PENNSYLVANIA PATTERN

Weights Ass'd, Lbs.	8⅛ to 7⅛	7 to 8	7⅛ to 8⅛	7 to 9
Width Cut, Inches	11½ to 12	12 to 12½	12½ to 13	12 to 13¼
Weight Dozen, Lbs.	94	95	105	106
Per Dozen	**$33.00**	**35.00**	**35.00**	**35.00**

Half Dozen in a Case

*DIAMOND EDGE HAND MADE

No. DEH10—CANADA PATTERN

Natural Black Finish, Honed Bevel; with Timber Spring

Highest Grade Refined Crucible Steel, Perfectly Welded; Hand Hammered; Hand Tempered and Hand Ground; Accurately Shaped, Beveled and Ground; Correctly Balanced. Made to Withstand Hard Usage and to Give the Best Results.

Weights Assorted, Lbs.	6½ to 7⅛	7 to 8	7⅛ to 8⅛
Width Cut, Inches	11½ to 12	12 to 12½	12½ to 13
Weight Dozen, Lbs.	97	103	106
Per Dozen	**$35.00**	**37.00**	**37.00**

Half Dozen in a Case

PEERLESS

No. P20 CANADA PATTERN

Crucible Forged Steel Bit; Soft Steel Body; **Gold Bronzed Finish;** Polished Bit and Head.

Weight Ass'd, Lbs.	6⅜ to 7⅝	7 to 8	7⅝ to 8⅛	7 to 9
Width Cut, Inches	11⅜ to 12	12 to 12½	12½ to 13	12 to 13¼
Weight Dozen, Lbs.	96	103	110	106
Per Dozen	$44.00 **47.00**	46.00 **49.00**	48.00 **49.00**	46.00 **49.00**

BARTON

No. B10—CANADA PATTERN

Extra Cast Steel Bit; Soft Steel Body; **Black Finish;** Polished Bit and Head

Weights Assorted, Lbs.	7 to 8	7 to 9
Width Cut, Inches	12 to 13	13 to 14
Weight Dozen, Lbs.	110	120
Per Dozen	$45.00 **$4.00**	45.00 **$4.00**

Half Dozen in a Case

"DIAMOND EDGE IS A QUALITY PLEDGE"

ADZES

HOUSE CARPENTERS

HALF HEAD

DIAMOND EDGE Tools are Recognized as the Best Made, and Represent the Acme of Perfection in Tool Making. Any which May Prove Defective will be Cheerfully Replaced.

Warranted to Withstand the Hardest Usage.

Lengths 9 to 10 inches

*DIAMOND EDGE

Gold Bronzed Finish, Polished Bit and Head; Extra Refined, Highly Finished; Crucible Tool Steel; Oil Tempered, Ground and Sharpened Cutting Edge; Hardened Laid Steel Head; Eye Punched from Solid Metal.

Nos.	DEC3	DEC3½	DEC4	DEC4½
Width Cut, Inches	3	3½	4	4½
Weight Each, Lbs.	3½	3¾	4	4¼
Weight Dozen, Lbs.	50	53	54	60
Per Dozen	$22.00	22.00	22.00	22.00

*DIAMOND EDGE HAND MADE

Natural Black Finish

Hand Forged from Extra Quality Tool Steel; Crucible Steel Cutting Edge, Ground and Polished; Hardened Laid Steel Head; Eye Punched from Solid Metal.

Nos.	DHC3½	DHC4	DHC4½
Width Cut, Inches	3½	4	4½
Weight Each, Lbs.	3¾	4	4¼
Weight Dozen, Lbs.	54	57	60
Per Dozen	$23.00	23.00	23.00

Half Dozen in a Case

Bridge TRADE MARK

Lengths 9 to 10 inches

*BRIDGE

Fire Bronzed (Red) Finish Body; Polished Bit and Head; Extra Quality Crucible Tool Steel; Tempered Bit and Hardened Head; Soft Steel Body.

Nos.	BC3½	BC4	BC4½
Width Cut, Inches	3½	4	4½
Weight Each, Lbs.	3¾	4	4¼
Weight Dozen, Lbs	54	57	60
Per Dozen	$21.00	21.00	21.00

One Dozen in a Case

WHITE

Japanned Body, Polished Bit and Head; Soft Steel Body; Crucible Forged Steel Bit; Hardened Head; Ground and Tempered Cutting Edge.

Per Dozen

No. WC4½—Width of Cut 4 to 4½ inches; Weight Each 3½ to 3¾ lbs. $40.00

Half Dozen in a Cardboard Box

COOPERS'

Used for Driving Hoops on Barrels

WHITE

Extra Refined Cast Steel; Outside of Head and Blade Polished, Inside and Shank Japanned; Applewood Handle Set in Deep Socket, with Iron Rod Through Entire Length and Bolted to Head.

Per Dozen

No. W2 —2¾ inch Cut; Weight Each 3 lbs. $54.00

No. W3½—3 inch Cut; Weight Each 3¾ lbs. 56.00

Loose

COMBINATION WRENCHES

NUT AND PIPE

6 to 14 inch, Wood Handle

18 to 48 inch, Steel Bar

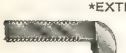
*DIAMOND EDGE

Highest Grade Drop Forged Tool Steel; Polished Shank, Frame and Jaws; 6 to 14 inch Have Ebony Finished Hardwood Handle, with Shank Extending Through with Nut Cap on End; 18 to 48 inch Have Solid Steel Handle; Lengths 6, 8, 36 and 48 inch Have Single Spring; Lengths 10, 14, 18 and 24 inch Have Double Spring.

Nos	DEX6	DEX8	DEX10	DEX14	DEX18	DEX24	DEX36	DEX48
Length, Inches	6	8	10	14	18	24	36	48
Adjustable, Inches	⅜ to ¾	⅜ to 1	⅜ to 1¼	⅜ to 1⅞	⅜ to 2⅜	⅜ to 2⅞	⅜ to 4	1 to 5½
Weight Each, Lbs	½	1	2	3½	6	10	15	24½
Each	$1.40	1.40	1.60	2.00	2.70	4.00	10.00	16.00

6 to 24 inch, Six in a Wood Box; 36 and 48 inch, Loose

*EXTRA PARTS FOR *DIAMOND EDGE* NUT AND PIPE WRENCH



No. DEXJ—FRONT JAWS

No. DEXF—FRAMES

No. DEXN—NUTS

For Wrenches, In..	6	8	10	14
Weight Each, Lbs	⅛	⅛	⅛	⅛
Each	$0 64	64	68	.84
For Wrenches, In..	**18**	**24**	**36**	**48**
Weight Each, Lbs...	1⅜	2⅛	4⅜	⅞
Each	$1.10	1.30	5.20	8.00

For Wrenches, In....	6	8	10	14
Weight Each, Lbs.....	¼	¼	¼	¼
Each	$0 30	.30	.34	.44
For Wrenches, In....	**18**	**24**	**36**	**48**
Weight Each, Lbs.....	½	¾	1½	2
Each	$0 46	.68	1.50	1 70

For Wrenches, In....	6	8	10	14
Weight Each, Ozs....	½	1	2	4
Each	$0 10	.10	12	16
For Wrenches, In....	**18**	**24**	**36**	**48**
Weight Each, Ozs....	4	8	14	16
Each	$0 20	.30	.64	1 10

Loose

6 to 14 inch, Wood Handle

18 to 48 inch, Steel Bar

STILLSON

Drop Forged Tool Steel; Polished Shank, Frame and Jaws; 6 to 14 inch Have Ebony Finished Hardwood Handle, with Shank Extending Through with Nut Cap on End; 18 to 48 inch Have Solid Steel Handle; Lengths 6, 8, 36 and 48 inch Have Single Spring; Lengths 10, 14, 18 and 24 inch Have Double Spring.

Nos	P6	P8	P10	P14	P18	P24	P36	P48
Length, Inches	6	8	10	14	18	24	36	48
Adjustable, Inches	⅜ to ¾	⅜ to 1	⅜ to 1¼	⅜ to 1⅞	⅜ to 2⅜	⅜ to 2⅞	⅜ to 4	1 to 5½
Weight Each, Lbs	½	1	2	3½	6	10	15	24½
Each	$2.00	2.00	2.25	3.00	4.00	6.00	12.00	18 00
	1.30	1.30	1.40	1.80	2.50	3.70	7.20	10.80

6 to 24 inch, Six in a Wood Box; 36 and 48 inch, Loose

EXTRA PARTS FOR STILLSON WRENCH

No. PJ—FRONT JAWS

No. PP—FRAMES

No. PN—NUTS

For Wrenches, In....	6	8	10	14
Weight Each, Lbs.....	¼	¼	½	⅝
Each	$0 75	.75	.80	1.00
	.50	.50	.52	.64
For Wrenches, In....	**18**	**24**	**36**	**48**
Weight Each, Lbs.....	1¼	2½	4½	6⅞
Each	$1 33	2.10	4 76	7 25
	.86	1.36	3.12	4.80

For Wrenches, In....	6	8	10	14
Weight Each, Lbs.....	⅛	⅛	½	½
Each	$0 35	.35	.40	.50
	.22	.22	.26	.34
For Wrenches, In..	**18**	**24**	**36**	**48**
Weight Each, Lbs. .	¾	¾	1½	2
Each	$0 55	.80	1 20	1 80
	.50	.70	1.80	1.70

For Wrenches, In....	6	8	10	14
Weight Each, Ozs.....	½	1	2	4
Each	$0 11	.11	.14	.17
	.08	.08	.10	.12
For Wrenches, In....	**18**	**24**	**36**	**48**
Weight Each, Ozs.....	4	8	14	16
Each	$0 22	.35	.55	95
	.12	.24	.36	.62

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

COMBINATION WRENCHES

NUT AND PIPE WRENCHES WITH THREAD CUTTERS

*DIAMOND EDGE

Drop Forged Tool Steel, Polished Oil Tempered Jaws; Natural Finish Oval Shank; Milled Flat and Polished Faces and Edges.

	Per Dozen
No. DE100 —Natural Finish Shank; 8 inches Long, Ends Open 1 and 1 7/8 inches; Cuts Threads 3/8, 18, 3/8 16 and 1/2-13	$7 15
No. DEN100—Full Nickel Plated; Otherwise Same as No. DE100	9 90

Weight per Dozen 11¼ lbs.
Half Dozen in a Box

ELGIN ADJUSTABLE

Full Nickel Plated Cast Steel, Hardened Jaws; Milled Teeth, Upper Jaw can be Closed or Opened by Turning the Knurled Adjusting Nut; Lower Jaw and Handle One Piece of Steel; Reinforced at Jaws with Heavy Steel Plate, Screwed to Body.

	Per Dozen
No. E—Length 7 inches; Holds Pipe up to ¾ inch; and Nuts for ½ inch Bolts; will take Threading Attachment Shown Below; Adapted for Use in Corners and Cramped Places; Weight per Dozen 7½ lbs.	$14.00 12 00

Twelfth Dozen in a Box

No. A

No. D

No. EI

No. J

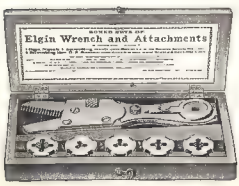
ATTACHMENTS AND EXTRAS FOR ELGIN WRENCHES

Nickel Plated

	Per Dozen
No. A —Threading Attachment, with One Die; Any Size Listed Below; for Threading or Re-threading Bolts by Operating Small Thumb Knob, the Die is Made to Work Ratchet; Weight per Dozen 1 lb.	$13 75 12 00
No. D —Dies, U. S. Standard Threads, 1/4-20, 5/16 18, 3/8-16, 7/16 14, 1/2-13; Weight per Dozen about 1 lb	6.60 6 00
No. EI —Inserts; to Make Ratcheting Nut Wrench; Square Opening ¼ and ⅜ inch, Hexagon Opening ⅜ and ½ inch; for Taps, Set Screws and Small Nuts; Weight per Dozen about 1 lb.	6.60 6.00
No. J —Extra Jaws; Length 2 inches; Weight per Dozen about 1 lb.	4.40 3.00

Loose

When Ordering Attachments, Give Size Wanted



ELGIN WRENCH SETS

Complete with Attachments; In Hardwood Hinged Lid Case

	Per Set
No. E10—Contains One Elgin Adjustable Nickel Plated Wrench, One Die Stock, One Insert ¾ inch; One Each U. S. Dies, 1/4-20, 5/16-18, 3/8-16, 7/16-14 and 1/2-13; Each Die in a Separate Compartment; Weight per Case 1 0-16 lbs.	$8 10 6.00

One Set in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

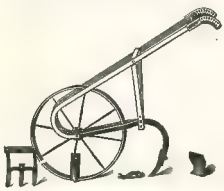
GARDEN CULTIVATORS

*DIAMOND EDGE

So Constructed that the Center of Weight Falls Directly Over the Pivoting Point of the Wheel Axle, Making it Self-balancing.

The Handle Bars, Braces and Double Steel Beams are Made of ⅝x¼ inch Bar Steel; Strongly Braced and Bolted and Very Rigid; Handle is Adjustable to Height and can be Raised or Lowered to Suit the User.

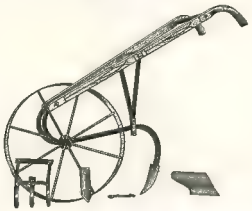
24 inch Steel Wheel with 1¼ inch Steel Tire.



Each

No. DE225—**Malleable Iron Hand Grips;** Handle Bars and Braces Painted Red; Wheel and Beam Painted Black; Blades Finished Blue; with Plow Bottom, Double Shovel Blade, Calf Tongue; Combined Weeder and Cultivator Blade and Wrench; Weight Complete 25 lbs..... **$4.40**

Three in a Bundle



Each

No. DE100—Varnished Hardwood Bent Handles and Grips, Bolted to Frame; Handle Bars and Braces Painted Red; Wheel and Beam Painted Black; Blades Finished Blue; with Plow Bottom, Double Shovel and Calf Tongue Blades; Combined Weeder and Cultivator Blade and Wrench, Weight Complete 25 lbs..... **$4.40**

Three in a Bundle

DEXTER

Adjustable in Height

Galvanized Steel Wheel; Malleable Iron Beam; Ash Handles; Crucible Steel Blades; Malleable Iron Rake.

Beam Painted Green; Handles Varnished, with Red Grips.

Each

No. DC 18 inch Wheel, with 1 inch Steel Rim; 1 inch Beam; 1⅛x1⅞ inch Handle Bars; with Reversible Shovel Blade 12½ inches Long; with 1¼ inch and 3¼ inch Points; Plow Bottom; Wing Sweep or Weeder; 8 Tooth Malleable Rake and Wrench; Weight Complete, 20 lbs... ..... **$4.50**

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

GARDEN CULTIVATORS

**DIAMOND EDGE*

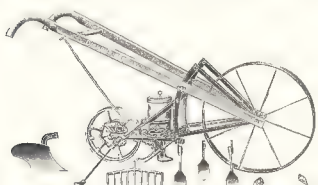
This Cultivator is a New Tool that Has More Good Features that are to the Advantage of the Gardener and Farmer than Any Tool Ever Made for the Purpose. It has 24 Inch High Wheel and 1¾ Inch Broad Tire, it Runs Easy and Uniform in Depth. **4½ Feet Bent Handles that can be Adjusted to Any Height Person are Attached Direct to Axle.** The Frame is Light, Simple and Strong. It is Made Entirely of Steel and Malleable Iron and will not Break or Get Out of Shape. It has Three Large, Reversible Bull Tongue Blades that can be Quickly Removed with Other Attachments or Drill as to be Used

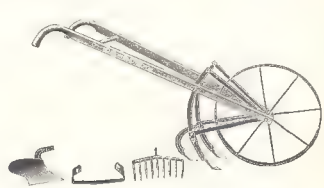
PLOW is Large, has Good Land Side and will Plow Easy and Perfectly Furrow for Planting, Hill Plants and Cover Large Seed

RAKE will Fit Plowed Ground for Planting, Break Surface Crust and Destroy Small Weeds.

HOE takes the Place of a Hand Hoe and is a Perfect Tool for Cultivating Onions and Other Small Garden Crops

This Garden Cultivator will Plow the Ground, Prepare for Seed and Take Care of the Crop, from the time it is Planted Until it is Ready to Harvest, and do it Better with Less Labor than Any Other Garden Tool Made





All Iron Work Finished in a Bright Green and Red. Handles, Natural Wood Finish and Varnished. Handle Grips Painted Bright Red.

	Each		Each
No. DE 275A With Seed Drill, Weight Complete 50 lbs	$14 50	**No. DE 275** Without Seed Drill, Weight Complete 40 lbs	$9 50

One in a Crate

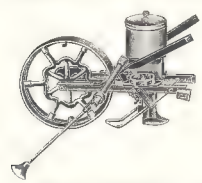
DIRECTIONS FOR ADJUSTING AND USING THE *DIAMOND EDGE* GARDEN CULTIVATOR.

PLOW—Take Off Outside Short Legs and Center Leg, Put Plow in Slot in Center of Head and Adjust Frame so Plow will Run Depth Required. This Attachment is Valuable for Hilling, as well as for Plowing.

RAKE—Put Rake in Slot in Center of Head.

HOE—When Tool is Set up for Cultivator Take Out Center Leg and Teeth Off Outside Legs and Bolt Hoe On Instead of Cultivator Teeth. Or Take Out Center Leg and Hoe Outside Teeth On and Bolt Hoe on Back of Standards, Using Teeth Bolts for not Removing Teeth. Adjust Frame so Hoe will Run Depth Required. Best Results will be Obtained by Running this Attachment about the Depth of a Common Hand Hoe.

CULTIVATOR—Best Part of the *DIAMOND EDGE* and the Tool Most Used. This Consists of the Three Reversible Cultivator Blades which Run with Throw to Left in the Center of the Row, and Away from the Plants. For Covering Seed Take Out Center Tooth and Run Outside Teeth on Each Side of Row to be Covered and it will do the Work Perfectly



**DIAMOND EDGE* SEED DRILL

No. A Frame Made of Best Steel Castings of Best Malleable Iron, Heavy Sheet Metal Hopper Capacity 1 Quart. Size of Wheels 20 Inch, All Painted Bright Red and Green. Weight 20 lbs. $8 00

One in a Box

TO ATTACH AND OPERATE DRILL ATTACHMENT

Take Off All Standards Save to Each Frame Free from all Attachments, then Bolt Flat End of Drill Beam to Cultivator Frame, Using Upper Holes in Standards. Bolt Both Pieces of Drill to Standards of Cultivator Frame, Using Lower Holes. Feed Cut-Off Attachment to Handle Bar Putting On with Screws With Top on Lock of Right Handle Near the Hand. Attach One End of String to this and the Other End to Cut-off Device on Drill so when Cut-off Is Open Large End of Trip will Point Toward Wheel and the String will be Loose. To Close or Cut Off Feed Turn Trip so Loose will be Drawn Taut and String Tight By Loosening Thumb Nut and Turning Device on Box of Drill. Any Kind of Seed Can Be Sown Evenly and Well.

We Believe there is no Combination Garden Cultivator and Drill that is More Appreciated by the Gardener and Farmer than This Style, not Only on Account of its Strength, Ease of Operation and Quick Adjustment but its Extremely Low Price.

"DIAMOND EDGE IS A QUALITY PLEDGE"

HUNTERS AXES OR HATCHETS

YANKEE, AXE PATTERN

Originally Designed for Sportsmen's Use, these Little Axes Have Become Recognized as a Most Convenient Tool about the House. They Serve the Purpose of a Hatchet or Hammer as Well as a Small Axe, with the Result that their Use is General.

*DIAMOND EDGE

Highest Grade Crucible Tool Steel, Selected Hickory Handle

POLISHED AND ETCHED

Per Dozen

No. DPY0—3½ inch Cut; 5 inches High; 14 inch Handle; Weight Without Handle 1¾ lbs.; Weight per Dozen 19½ lbs. **$11.50**

BRONZED BODY, POLISHED BIT AND HEAD

Per Dozen

No. DEK0—3 inch Cut; 5 inches High; 14 inch Handle; Weight Without Handle 1¾ lbs.; Weight per Dozen 19½ lbs. **$10.50**

No. DEK1—3½ inch Cut; 5½ inches High; 16 inch Handle; Wt. Without Handle 1⅝ lbs.; Weight per Dozen 20 lbs. . **11.00**

No. DEK2—3½ inch Cut; 5½ inches Height 18 inch Handle; Wt. without Handle 1⅝ lbs.; Weight per Dozen 22 lbs **11.00**

*DIAMOND EDGE

Bronzed Body; Polished Bit and Head

Highest Grade Crucible Tool Steel; Selected Hickory Handle

Per Dozen

No. DK0—3 inch Cut; 5 inches High; 14 inch Handle; Weight Without Handle 1¾ lbs.; Weight per Dozen 19½ lbs. **$11.00**

*DIAMOND EDGE HAND MADE

Natural Black Finish

Highest Grade Crucible Tool Steel; Selected Hickory Handle

Per Dozen

No. DEY0—3 inch Cut; 5 inches High; 14 inch Handle; Weight Without Handle 1¾ lbs.; Weight per Dozen 21 lbs. . **$11.00**

No. DEY1—3½ inch Cut; 5½ inches High; 16 inch Handle; Wt. Without Handle 1⅝ lbs.; Weight per Dozen 22 lbs. **11.50**

Half Dozen in a Box; Two Dozen in a Case

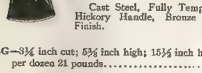
*BRIDGE TOOL CO.

Extra Quality Crucible Steel; Select Hickory Handle, Fine Bronze Body Polished Bit and Head

Per Dozen

No. B0—3 inch Cut; 5 inches High; 14 inch Handle; Weight Without Handle 1¾ lbs.; Weight per Dozen 19½ lbs. **$9 50**

No. B1—3½ inch Cut; 5½ inches High; 16 inch Handle; Weight Without Handle 1⅝ lbs.; Weight per Dozen 20 lbs. . . **10 00**

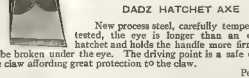


LITTLE GIANT

Cast Steel, Fully Tempered, Sharpened Bit, Hickory Handle, Bronze Body; Dead Black Finish.

Per dozen

No. LG—3¼ inch cut; 5⅜ inch high; 15½ inch handle; Weight per dozen 21 pounds. **$8.00**



DADZ HATCHET AXE

New process steel, carefully tempered and tested, the eye is longer than an ordinary hatchet and holds the handle more firmly. It can not be broken under the eye. The driving point is a safe distance from the claw affording great protection to the claw.

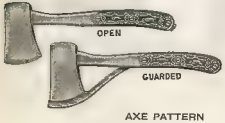
Per dozen

No. 2—Dadz Hatchet Axe; Red Pole Polished Blade and Head; 14 inch handle; Weight per dozen 25½ pounds. **$8.50**

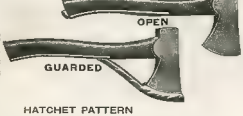
Half Dozen in a Box.

SAFETY POCKET AXES

MARBLES



Solid Tool Steel Blade; Tempered and Polished; Steel Guard Fastened to Handle with Spring Hinge, and Lined with Lead to Preserve a Sharp Cutting Edge on Blade. When Axe is in Use the Guard Folds Back into the Handle.



AXE PATTERN

Per Dozen

No. M2—Steel Handle; Engraved Hard Rubber Grip; Width of Bit 2⅜ inches; Length of Head 4 inches; Length of Handle 11 inches; Weight 20 ozs. **$48 00**

Weight per Dozen 18 lbs.

HATCHET PATTERN

Per Dozen

No. M4—Hickory Handle; Width of Bit 2¾ inches; Length of Head 4¾ inches; Length of Handle 11¾ inches; Weight 24 ozs. **$20.00**

Weight per Dozen 19 lbs.

One Sixth Dozen in a Box; One Dozen in a Case

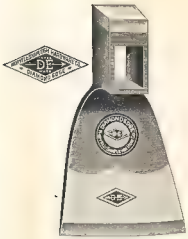
For Holsters for Pocket Axes, See Page 2882

"DIAMOND EDGE IS A QUALITY PLEDGE"

ADZES

RAILROAD

FULL HEAD



* *DIAMOND EDGE*

Gold Bronzed; Polished Bit and Head, Extra Refined, Highly Finished, Crucible Tool Steel; Oil Tempered, Ground and Sharpened Cutting Edge; Hardened Laid Steel Head; Eye Punched from Solid Steel.

Nos.	DER4	DER5
Width Cut, Inches	4	5
Weight Each, Lbs.	3¾	4
Weight Dozen, Lbs.	57	60
Per Dozen	$22 50	$2 50

* BRIDGE

Fire Bronzed (Red) Finish Body; Polished Bit and Head; Extra Quality, Tool Steel Tempered Bit; High Carbon Steel Body and Head.

Nos.	BR4	BR5
Width Cut, Inches	4	5
Weight Each, Lbs.	3¾	4
Weight Dozen, Lbs.	57	60
Per Dozen	$21.50	21.50

Half Dozen in a Case

TRACKER

Black Finish; Labeled

One Piece Solid Steel; The Bit is Carefully Tempered and Ground.

Nos.	T4	T5
Width Cut, Inches	4	5
Weight Each, Lbs.	3¾	4
Weight Dozen, Lbs.	57	60
Per Dozen	$16.50	16 50

SHIP CARPENTERS—SPUR HEAD

* *DIAMOND EDGE*

Gold Bronzed Finish; Polished Bit, Head and Spur; Extra Refined, Highly Finished, Crucible Tool Steel; Oil Tempered, Ground and Sharpened Cutting Edge; Eye Punched from Solid Steel.

PLAIN BIT

Per Dozen

No. DE4$\frac{1}{2}$—Width of Cut 4 to 4½ inches; Weight 3 to 3½ lbs. . . $26.50

LIPPED BIT

Per Dozen

No. DEL4$\frac{1}{2}$—Width of Cut 4 to 4½ inches; Weight 2½ to 3 lbs. $33 00

Half Dozen in a Case; Average Weight per Dozen 50 lbs.

* *DIAMOND EDGE*

HAND MADE

Dead Black Finish, Polished Head and Cutting Edge; Highest Grade Crucible Cast Steel, Oil Tempered Bit.

Per Dozen

No. DEH4$\frac{1}{2}$ - Width of Cut 4 to 4½ inches; Weight 2½ to 3 lbs. . . . $27.50

Half Dozen in a Case

Average Weight per Dozen 50 lbs.

WHITE

Extra Refined Cast Steel; **Japanned Body;** Polished Head and Bit.

Nos.	W4	W4$\frac{1}{2}$	W4$\frac{1}{2}$
Cut, Inches	4	4½	4½
Weight, Lbs.	2	2½	2½
Per Dozen	$59 00	60.00	00.00

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

POCKET KNIFE ASSORTMENTS

*DIAMOND EDGE SAFETY PRESS BUTTON

(U. S. Patent 812,601 and 845,130)

Different from any Other Safety Press Button Pocket Knife on the Market. Has a Safety Lock which Locks the Blade While it is Open and Also locks it when it is Closed. It is Impossible to Close the Knife on the User's Hands. It is Also Impossible for the Knife to Open in One's Pocket. It is Stronger, Simpler and Better Constructed than any Other Press Button Knife on the Market. All Joints are Protected Against Wear; all Blades are of the celebrated *DIAMOND EDGE* Quality and are FULLY GUARANTEED.

Per Assortment

No. SPB—Contains Twelve Knives; Two Blades; Length 3¾ inches; **Assorted Handles,** Cocobolo Celluloid, Ebony Celluloid, Ivory Celluloid, Tortoise Shell Celluloid, Smoked Pearl Celluloid, Patent Stag and Mother of Pearl; Plain and German Silver Tipped Ends; Full Crocus Polished and Etched Blades; Brass Lining; German Silver Press Buttons and Safety Slides **$23 00**

Each Assortment in Red Plush Lined Compartment Wood Display Case, Covered with Imitation Black Morocco Leather; Inside of Lid Lined with Red Silk; Two Fancy Brass Clasps; Size of Case 10⅜ x 4 x 1½ inches; Weight per Assortment 1¼ lbs.

STERLING SILVER

Per Assortment

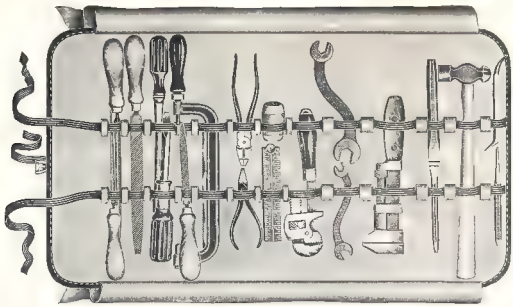
No. SS—Contains Twelve Knives; Six with Two Blades and Six with Four Blades; Assorted Lengths 2¾, 3 and 3¼ inches; **Sterling Silver Handles,** French Gray Finish; Assorted Embossed Fancy Patterns; Full Crocus Polished Blades; German Silver Lining. **$39 00**

Each Assortment in a Red Velvet Lined Compartment Cardboard Display Case; Size 10½ x 3¾ x ¾ inches; Weight per Assortment 1 lb.

One Assortment with Case in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

AUTOMOBILE TOOL KITS



STANDARD — Each

No. 85—Contains 22 High Grade Tools, with Other Necessary Articles, in 17x37 Inch Canvas Roll; Weight 12 lbs. **$12 00**

Contents of Roll

1 Bridge Screw Driver No. BR6.
1 *DIAMOND EDGE* Screwdriver No. DEM4½.
1 Machinists' Wrench No. D100.
1 Machinists' Wrench No. D102
1 *DIAMOND EDGE* Monkey Wrench No. DEK10, 10 inch.
1 Stillson Pipe Wrench, 10 inch.
1 Bridge Mill File, 8 inch, with Handle.
1 Bridge Square File, 8 inch, with Handle.
1 Bridge Round File, 8 inch, with Handle.
1 Bridge Warding File, 6 inch, with Handle
1 Bridge Machinists' Ball Pein Hammer No. BB2/0.
1 Bridge Cold Chisel No. B, ½ inch.
1 Bridge Cold Chisel No. B, ⅝ inch.
1 Bridge Center Punch No. BC.
2 Sheets *DIAMOND EDGE* Emery Paper No. ½.
2 Sheets *DIAMOND EDGE* Sandpaper No. 1.
1 Boxwood Rule No. 68
1 Spool Hemp and Copper Wire No. 18.
1 No. B8 Bridge Hack Saw Frame
1 Bridge Hack Saw Blade No. BR, 8 inch.
1 Cotter Pin Extractor No. 237.
1 Bridge Flat Nose Pliers, 5 inch No. B10
1 Bridge Side-cutting Pliers No. B35, 5 inch.
1 Bridge Drive Punch No. B1
1 Bridge Drive Punch No. B3.

AUTOMOBILE AND MACHINE TOOLS

CURVED BIT SCRAPERS

Drop Forged English File Steel, Natural Finish Shank, Tempered and Highly Polished Blade, Varnished Hardwood Handle, Nickel Plated Brass Ferrule.

Per Dozen Sets

No. 1202—In Sets of 3 Scrapers; One Each 11, 12 and 13 inches Long; Weight per Dozen Sets 15 lbs **$24 00**

Twelve Dozen Sets in a Box

THREE SQUARE SCRAPERS

Drop Forged English File Steel, Properly Tempered, Ground and Sharpened; Tinned Edges and Point; Polished Cocobolo Handle, Brass Ferrule

Per Dozen

No. 1920—3½ inch Blade; Length Over All 7½ inches; Weight per Dozen 1½ lbs **$5.00**

One Dozen in a Box

SCRAPING TOOLS

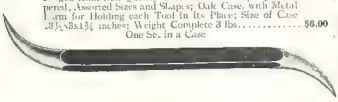
Especially Designed for Use on Automobiles

For Scraping Metal Bearings and Oil Grooves in Automobiles.

Per Set

No. 22—Contains 6 Mounted, Hollow Ground Scrapers; Carefully Forged from Best Quality Tool Steel and Properly Tempered, Assorted Sizes and Shapes; Oak Case, with Metal Clamp for Holding each Tool in Its Place; Size of Case 3¾x8x13¾ inches; Weight Complete 3 lbs..... **$6.00**

One Set in a Case

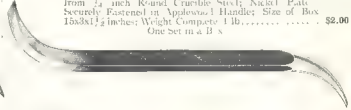


For Removing Carbon and Soot from top of Piston, without Removing Head of Cylinder.

Per Set

No. 25—Set Contains 3 Scrapers, each Differently Shaped; Forged from ¾ inch Round Crucible Steel, Nickel Plated, Securely Fastened in Applewood Handles; Size of Box 15x8x1½ inches; Weight Complete 1 lb..... **$2.00**

One Set in a Box



COTTER PIN EXTRACTORS

Drop Forged, Square Steel Body; Tapered Points, Black Finish; Ground Points

Per Dozen

No. 236—6x5-16 inch; Curved Tapered Round Points; Weight per Dozen 1⅝ lbs..... **$2 40**

Per Dozen

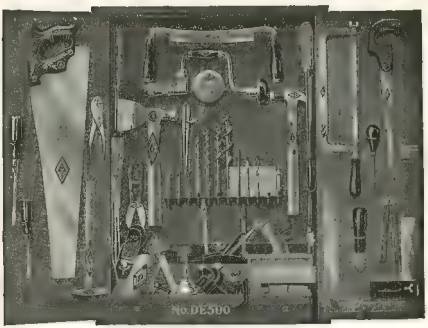
No. 237—6x5-16 inch; One Tapered Round Point and One Curved Chisel Point; Weight per Dozen 1⅝ lbs..... **$2 40**

One Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

TOOL CABINETS

*DIAMOND EDGE



With 49 Highest Grade Guaranteed Tools

Specially Selected **Oak, Wall Cabinet, Antique Finish,** Varnished and Hand Rubbed; Two Paneled Doors, with Brass Cylinder Lock and Two Steel Keys; Brass Plated Ball Top Steel Hinges, Inside Drawer, Two Brass Hangers on Back; Workmanship and Finish is First Class.

Dimensions of Cabinet

Outside—31 inches High, 22½ inches Wide; 7¾ inches Deep. **Inside**—28½ inches High, 21 inches Wide, 7¼ inches Deep; Drawer 3 inches Deep

Each

No. DE500—Complete, with 49 Tools and Other Accessory Articles..... **$47 30**

Contents of Cabinet

1 *DIAMOND EDGE Hand Saw, No. DE150, 22 inch
1 *DIAMOND EDGE Compass Saw, No. DE110, 12 inch.
1 *DIAMOND EDGE Hack Saw, No. DE125.
1 *DIAMOND EDGE Coping Saw, No. DE100.
1 *DIAMOND EDGE Nail Hammer, No. DE12.
1 *DIAMOND EDGE Riveting Hammer, No. DR0
1 *DIAMOND EDGE Shingling Hatchet, No. DE01.
1 *DIAMOND EDGE Drawing Knife, No. DE8, 8 inch.
1 *DIAMOND EDGE Auger Bit, No. DE100, ¾ inch.
1 *DIAMOND EDGE Auger Bit, No. DE100, ½ inch.
1 *DIAMOND EDGE Auger Bit, No. DE100, ⅜ inch.
1 *DIAMOND EDGE Auger Bit, No. DE100, 1 inch.
1 *DIAMOND EDGE Gimlet Bit, German Pattern, No. DG, 4-32 inch.
1 *DIAMOND EDGE Gimlet Bit, German Pattern, No. DG, 8-32 inch.
1 *DIAMOND EDGE No. DE108, 4-32 inch Drill Bit.
1 *DIAMOND EDGE No. DE108, 8-32 inch Drill Bit.
1 *DIAMOND EDGE Countersunk Bit, No DE14.
1 *DIAMOND EDGE Beamer Bit, No DE15.
1 *DIAMOND EDGE Screw Driver Bit, No. DE25.
1 *DIAMOND EDGE Socket Firmer Beveled Chisel, No. DEB, ¼ inch.
1 *DIAMOND EDGE Socket Firmer Beveled Chisel, No. DEB ½ inch
1 *DIAMOND EDGE Socket Firmer Beveled Chisel, No DEB 1 inch.
1 *DIAMOND EDGE Mill File, 8 inch, with Handle.
1 *DIAMOND EDGE Slim Taper File, 5½ inch, with Handle.
1 *DIAMOND EDGE Half Round Cabinet File, 10 inch, with Handle
1 *DIAMOND EDGE Oil Stone, Mounted, No DEM6, 6 inch
1 *DIAMOND EDGE Awl and Tool Set, No. DE20.
1 *DIAMOND EDGE Screw Driver, No. DER, 3 inch.
1 *DIAMOND EDGE Screw Driver, No. DER, 5 inch.
1 *DIAMOND EDGE Nail Set, No DE102.
1 *DIAMOND EDGE Combination Plier, Nickel Plated, No. DEN6
1 *DIAMOND EDGE Cabinet Scraper, No. DE, 3x5 inch.
1 *DIAMOND EDGE Wrench, No. DE150.
1 *DIAMOND EDGE Steel Square, No. DEB12
1 *DIAMOND EDGE Ratchet Brace, No. DE80, 8 inch.
1 *DIAMOND EDGE Divider, No. DE8, 8 inch
1 *DIAMOND EDGE Scratch Awl, No. DE4.
1 Blue Diamond Tape Line, No. BD50
1 *DIAMOND EDGE Block Plane, No. DE9½
1 *DIAMOND EDGE Jack Plane No. DE36
1 Norvell-Shapleigh Success Carpenters Pencil, No. 57.
1 Boxwood Rule, No. 68
1 Boxwood Level, No DE0.
1 Norleigh-Diamond Hickory Mallet, No ND50.
1 Zinc Oiler No 0
1 Vise, No. B2.
6 Sheets *DIAMOND EDGE Sandpaper, Assorted.
1 One Ounce Can LePage's Glue.
1 Package Wire Brads ½ inch
1 Package Wire Brads ¾ inch
1 Package Wire Brads, 1 inch.
1 Package Wire Brads, 1¼ inch.
1 No DE8, 8 inch Try Square.
1 Quik Frame Clamp, No. 6
1 Pair Tinners' Snips, Star, 3 inch.
1 Marking Gauge, No. 62.

Weight of Cabinet, with Tools 70 lbs.; Crated 90 lbs.

"*DIAMOND EDGE IS A QUALITY PLEDGE"

BOYS STEEL WAGONS

*NORLEIGH DIAMOND

"Norleigh Diamond" High Grade Boys' Wagons are Original in Construction and Distinctive in Appearance. They are Better Ironed, Better Finished and Much Stronger than any other.

The NORLEIGH DIAMOND Boys Wagon is **Better Ironed, Better Finished** and **Much Stronger** than any other Wagon on the Market. Just Compare our Gear with any other and Verify this Statement. Where other Front Gears are Riveted Once or Twice, the NORLEIGH DIAMOND is **Riveted, Welded** and **Reinforced at Nine Different Places.** Note the Practical and Powerful Fifth Wheel and Gear. Note that the Tongue is Ironed—this Obviates all Tongue Trouble—Tongue Remains where you Leave it—does not Fall to the Ground Examine the **New Idea Steel Hand Loop,** which is the Best and Most Practical ever Used.

The NORLEIGH DIAMOND Gear and Heavy Iron Work, together with the "New Idea" Large Barrel, Anti-Friction Outer Bearing Hubs and Extraordinary Heavy Spokes and Wide Tires, Enables the NORLEIGH DIAMOND to Withstand Heavy Loads and Rough Usage where other Wagons Break Down.

Body—24-Gauge Steel (others made of 29 Gauge). Double Beaded or Swedged. Top Edge Reinforced with Heavy Steel Wire; Bed Substantially Fastened to Gear by Eight Steel, Copper Plated Bolts and Nuts, with Washers Under Heads to Keep them from Pulling Through.

Finish—Enameled, Varnished and Decorated by Hand in **Three Different Color Combinations.** Green and Red Red and Green, and Blue and Black; Gold Letters and Decorations.

Wheels—Steel or Rubber, Highly Finished to Match Gear. **Fitted with Extra Heavy Spokes and Wide Tires;** "New Idea" Large Barrel Outer Bearing Anti-friction Hubs and Brass Plated Hub Caps.

Gear—Extra Heavy 10-Gauge Strap Steel (others made from 14-Gauge, which is much Lighter), Enameled to Match Wheels; "V" Shaped Braces; Improved Style **Reinforcing** Brace on Rear Axles, Extra Strong Fifth Wheel Braces (see Page 3351.)

Tongue—Made of Select Closely Grained Hard Wood, Finished in Oil; Fitted with "New Idea" Steel Hand Loop.

Packing All NORLEIGH DIAMOND Gears, Wheels and Tongues are Packed in the Wagon Beds; this Eliminates Battered or Broken Wheels and Lost Tongues. This also means a Lower Freight Rate.

WITH STEEL TIRES

Nos.	100/40	125/30	150/20	175/10	200 1	225/2	250/3	300/4	350/5
Body, Inches	9x18	10x20	11x22	12x24	13x26	14x28	15x30	16x32	18x36
Wheels, Inches	6x8	7x10	8x11	8x12	10x13	11x14	12x15	13x16	14x18
Weight per Dozen, Lbs.	90	100	110	150	190	210	240	270	300
Per Dozen	$17 50	19.50	21 50	26 00	30 00	34 00	37 00	43 00	66 00

Quarter Dozen in a Crate

WITH RUBBER TIRES

Nos.	R100/40	R125/30	R150/20	R175/10	R200/1	R225/2	R250/3	R300/4	R350/5
Body, Inches	9x18	10x20	11x22	12x24	13x26	14x28	15x30	16x32	18x36
Wheels, Inches	6x9	7x10	8x11	8x12	10x13	11x14	12x15	13x16	14x18
Size Tires, Inches	½	½	½	½	9/16	9/16	9/16	9/16	9/16
Weight per Dozen, Lbs.	95	105	115	155	200	235	250	275	400
Per Dozen	$25 00	27 50	30 00	35.00	46.00	50 00	56 00	62 00	86 00

Twelfth Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

BOYS STEEL WAGONS

Body—Steel, Corrugated or Swaged; Top Edge Reinforced with Steel Wire Cable; Substantially Fastened to Gearing with 8 Steel Bolts; no Rivets.

Gear—All Steel; "V" Shaped Braces.

Wheels—Steel; Finished in Pure Tin, Pressed Hubs.

Fifth Wheel—Has Large Circle, Givingan Equal Bearing on Rough Surfaces and Preventing Strain on Body.

Finish—Enameled, Varnished and Striped; Colors; Outside Bed, Crimson, with Two Gold Stripes, Gold Letters and Gold Decorations; Inside Bed, Sea Green, Gear, Sea Green; Wheels, Tin

★DIAMOND BRAND

Nos.	000	00	0	1	2	3	4	5
Body, Inches	9x18	10x20	11x22	12x24	13x26	14x28	15x30	16x36
Wheels, Inches	6 and 9	7 and 10	7 and 10	8 and 11	10 and 13	11 and 14	13 and 15	13 and 16	14 and 18
Weight per Dozen, Lbs.	75	90	110	140	165	190	210	260	375
Per Dozen	$15.00	14.50	15.50	19.50	23.50	26.50	27.50	29.50	51.00

Quarter and Half Dozen in a Crate
For Broken Crate Lots Add $0 50 Dozen Net

Body—Steel, Heavy Gauge, made more Rigid by Crimping at Top and Bottom.

Gear—All Steel, Extra Heavy; Heavy King Bolt Brace Extending to Extreme Lower Part of Gear, Holding the Axle Rigid and Taking the Strain off the Tongue.

Wheels—All Steel, Wabash Patent with Flat Spokes and "T" Shaped Rims.

Finish—Enameled and Decorated, Colors; Outside of Box, Dark Royal Blue; Inside, Light Turquoise Blue; Gearing and Wheels, Bright Vermillion.

WABASH STEEL EXPRESS

Nos.	W1	W2	W3
Body, Inches	13x26	14x28	15x30
Wheels, Inches	11	11	11
Weight per Dozen, Lbs.	260	280	375
Per Dozen	$42 00	45.50	49.00

Sixth Dozen in a Crate

BOYS WOOD WAGONS

Body—Selected Cotton Wood, Light and Durable.

Gear—Seasoned Oak.

Wheels—All Steel Wabash Patent, with Flat Spokes and "T" Shaped Rims.

Size—Body 16x34x5½ inches; Wheels 11 inches Front and 15 inches Rear.

Finish—Box Finished in Green and Hand Striped and Decorated; Gear and Wheels Red.

The Wabash

A real Farm Wagon in Miniature, with End Boards, End Rods, Reach and Fifth Wheel and all Necessary Braces. The Rear Braces are Independent of the Box.

WABASH FARM

	Each
No. 32—Weight Each 22 lbs.	$8.00

Two in a Crate

No. 32S—**Seats** for Wabash Farm Wagons No. 32; Weight Each 5 lbs;	Extra $1.00
No. 320S—**Shafts** for Wabash Farm Wagons No. 32, Weight Each 3 lbs.;	Extra 1.00

Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

SILVER PLATED FLAT WARE

H. & T. BRAND

Nickel Silver Base, Heavily Plated with Pure Silver; A1 (4 oz.) Plate; All Pieces are Full Weight, Full Size and Extra Finished and are Particularly Suitable for Restaurant and Family Use.

LORAINE PATTERN

Bright Finish Handles

Cuts Two Fifths Size

SPOONS

Bright Finish Bowls

	Per Dozen
Tea	
No. **LT10**—Length 5⅛ inch; Weight per Dozen ¾ lb.	$2.70
Dessert	
No. **LD20**—Length 7 inches; Weight per Dozen 1⅛ lbs.	$4.20
Table	
No. **LS30**—Length 8 inches; Weight per Dozen 1⅝ lbs.	$5.50

One Dozen in a Plain Box

FORKS

Flat Handles; Four Tines, Bright Finish

	Per Dozen
Medium	
No. **LFF75**—Length 7⅛ inches; Weight per Dozen 1⅝ lbs.	$5.50
Dessert	
No. **LDF77**—Length 7 inches; Weight per Dozen 1½ lbs.	$4.30

SUGAR SHELLS

Length 6 inches

Per Dozen

No. **LY7**—Bright Finish Bowls; Weight per Dozen ¾ lb $5.50

One Dozen in a Plain Box

BUTTER KNIVES

Length 7¼ inches

Per Dozen

No. **LBK84**—Bright Finish Blades; Weight per Dozen 1 lb ... $5.50

COLD MEAT FORKS

Length 7¾ inches

Per Dozen

No. **LCM78**—Four Tines, Bright Finish; Weight per Dozen 3 lbs. One in a Fancy Silk Lined Box $8.60

BERRY SPOONS

Length 8½ inches

Per Dozen

No. **LB8**—Bright Finish Bowls..... $12.60

One in a Fancy Silk Lined Box; Weight per Dozen 4½ lbs.

LADLES

Cream, Length 6¾ inches

Per Dozen

No. **LCL**—Bright Finish Bowls; Weight per Dozen 3 lbs..... $6.60

Gravy, Length 7 inches

Per Dozen

No. **LGL**—Bright Finish Bowls; Weight per Dozen 4½ lbs..... $8.60

One in a Fancy Silk Lined Box

PIE KNIVES

Length 9¼ inches

Per Dozen

No. **LPK102**—Bright Finish Blades.....$16.00

One in a Fancy Silk Lined Box; Weight per Dozen 6 lbs.

SILVER PLATED FLAT WARE

THE AMERICAN SILVER CO.

WORLD BRAND

Highest Grade Nickel Silver Base; Full Hand Burnished; Warranted to Carry 50% More Silver than Regular Standard Plate on Flat Ware.

SHELL PATTERN

Bright Finish Handle

Cuts Two Fifths Size

TEA SPOONS

Length 5¾ inches; Bright Finish Bowls

	Per Dozen	
No. WST16— 6 oz. Plate	$3 80	$4 25
No. WST15—14 oz. Plate	5 40	6.00

Weight per Dozen ¾ lb.

DESSERT SPOONS

Length 7 inches; Bright Finish Bowls

	Per Dozen	
No. WSD20— 6 oz. Plate	$6 70	$ 7 50
No. WSD25—14 oz. Plate	9 00	10 00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box

TABLE SPOONS

Length 8 inches; Bright Finish Bowls

	Per Dozen	
No. WSS30— 6 oz Plate	$ 7 70	$ 8 50
No. WSS35—14 oz. Plate	10 50	12 00

Weight per Dozen 1¾ lbs.

Flat Handles; Four Tines, Bright Finish

MEDIUM FORKS

Length 7½ inches

	Per Dozen
No. WSFF75— 6 oz. Plate	$ 7 70 $ 8 50
No. WSFF76—14 oz. Plate	10.50 12.00

Weight per Dozen 1¾ lbs.

DESSERT FORKS

Length 7 inches

	Per Dozen	
No. WSDF77 - 6 oz. Plate	$6 70	$ 7 50
No. WSDF78—14 oz. Plate	9 00	10 00

Weight per Dozen 1¾ lbs.

One Dozen in a Plain Box

SUGAR SHELSL

Length 6 inches

	Per Dozen	
No. WSY7— 6 oz. Plate; Bright Finish Bowls	$ 8 50	$ 9 50
No. WSY8—14 oz. Plate; Bright Finish Bowls	10 40	11 50

Weight per Dozen 2¼ lbs.

BUTTER KNIVES

Length 7¼ inches

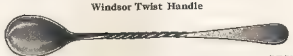
	Per Dozen	
No. WSBK84— 6 oz. Plate; Bright Finish Blades	$ 8 50	$ 9 50
No. WSBK85—14 oz. Plate; Bright Finish Blades	12 00	13 50

Weight per Dozen 3 lbs.

One in a Fancy Silk Lined Box

BAR SPOONS

Windsor Twist Handle



H & T BRAND

Nickel Silver Base; A-1 Silver Plated

Nos.	HBS4	HBS4½	HBS5	HBS6	HBS7	HBS8
Length, Inches	4	4½	5	6	7	8
Weight Gross, Lbs	3	4½	5½	8	9¾	11
Per Gross	$30.00	33.50	36.00	40.00	45 00	52 50

Twelfth Gross in a Box

CROWN SILVER CO.

Brass Base; Pure Silver Plated on Nickel

Nos.	CBS4	CBS4½	CBS5	CBS6	CBS7	CBS8
Length, Inches	4	4½	5	6	7	8
Weight Gross, Lbs.	2¾	4½	5	7	8½	10½
Per Gross	15 00	18 00	21 00	22.50	24.50	28.50

Sixth Gross in a Box

ICE CREAM SODA SPOONS

Plain Spoon Bowl, Straight Windsor Handle

H & T BRAND

Nickel Silver Base; A-1 Silver Plated. Per Gross

No. HSS7 —Length 7 inches; Weight per Gross 9½ lbs	$45 00
No. HSS8—Length 8 inches, Weight per Gross 9¾ lbs.	52 50

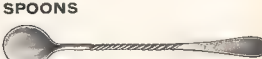
Twelfth Gross in a Box

CROWN SILVER CO.

Brass Base; Pure Silver Plated on Nickel. Per Gross

No. CSS7—Length 7 inches; Weight per Gross 9 lbs.	$35 00
No. CSS8—Length 8 inches, Weight per Gross 9½ lbs.	31 50

Sixth Gross in a Box



Round Bowl, Windsor Twist Handle

H & T BRAND

Nickel Silver Base; A-1 Silver Plated Per Gross

No. HSR5—Length 5 inches; Weight per Gross 6 lbs.	$39 00
No. HSR7—Length 7 inches; Weight per Gross 9 lbs.	45 00
No. HSR8—Length 8 inches; Weight per Gross 10½ lbs	52 50

Twelfth Gross in a Box

CROWN SILVER CO.

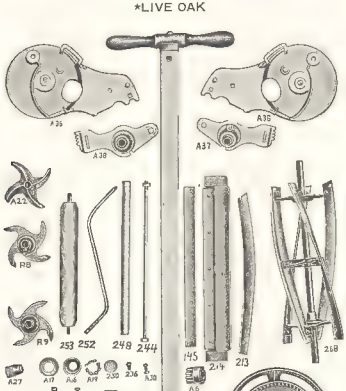
Nickel Silver Base; A 1 Silver Plated Per Gross

No. CSR5—Length 5 inches; Weight per Gross 4¼ lbs.	$21 00
No. CSR7—Length 7 inches; Weight per Gross 8½ lbs.	25 00
No. CSR8—Length 8 inches; Weight per Gross 10½ lbs.	33.50

Sixth Gross in a Box

✠LAWN MOWER PARTS

*LIVE OAK



PRICE LIST OF EXTRAS

Instructions for Ordering

1st—Give Number and Description of Part **2nd**—Always Give Name and Size of Mower

3rd—Always Give Year of Manufacture See Lower Side of Cutter Bar

Nos.	Name	Weight	Each
A 1—	Drive Wheel	7 lbs.	$3 50
A 6—	R. H. Pinion and Clutch	6 ozs.	64
A 7—	L. H. Pinion and Clutch	6 ozs.	64
A 8—	R. H. Reel Head, 1908 Mower	13 ozs.	1.20
A 9—	L. H. Reel Head, 1908 Mower	13 ozs.	1.20
R 8	R. H. Reel Head, 1905 to 1907	13 ozs.	1 20
R 9—	L. H. Reel Head, 1905 to 1907	13 ozs.	1 20
A11	R. H. Roller Hanger	4 ozs.	.50
A13—	L. H. Roller Hanger	4 ozs.	.50
A16	Ball Cup	2 ozs.	.38
A17—	Cap for Ball Cup	3 ozs. Dozen	26
A19—	Ball Retainer	2 ozs. Dozen	26
A21—	Set Screw, 5-16x3/4 inch	2 ozs. Dozen	1 20
A22—	Center Reel Head, 1908	9 ozs.	1 20
A23—	Bolt for Handle Brace	1 oz.	14
A26—	Bolt and Pin for Handle	3 ozs.	26
A27	Adjustable Cone	3 ozs.	76
A28—	Ratchet Pin for A6 and A7	2 ozs. Dozen	14

Nos.	Name	Weight	Each
A29—	Clamp Bolt	8 ozs. Dozen	$0 14
A30	Roller Hanger Bolt	8 ozs. Dozen	14
A31—	Bolt for Cutter Bar	4 ozs. Dozen	14
A32	Stationary Cone	2 ozs.	58
A34	Handle Socket	4 ozs.	50
A35	R. H. Side Plate	3½ lbs.	2 90
A36	L. H. Side Plate	1½ lbs.	2 90
A37	R. H. Adjusting Plate	22 ozs.	1 80
A38—	L. H. Adjusting Plate	9 ozs.	1 20
220	Center Reel Head, 1905 to 1907	5 ozs. Dozen	04
230—	Washer for Spindle	3 ozs. Dozen	10
236—	Screw for Spindle	6 ozs.	26
389—	Wrench	2 ozs.	14
370	5-16 Rod for Grinding	1 oz. Doz.	14
Balls, 5-16 inch		8 ozs.	50
Handle Grip		2½ lbs.	1 30
Handle	Complete		

	14 inch		16 inch		18 inch		20 inch	
Nos.	Name	Weight	Each	Weight	Each	Weight	Each	Weight	Each
213—	Spiral Blade for Reel	9 ozs.	$1 30	11 ozs.	$1.50	13 ozs.	$1 80	15 ozs.	$1 90
214—	Cutter Bar Complete	0 lbs.	2 50	0 lbs.	3 00	7 lbs.	3 30	7¾ lbs.	3 80
244—	¾ Iron Brace Rod	8 ozs.	.38	9 ozs.	.50	10 ozs.	50	11 ozs.	64
245—	Blade for Cutter Bar	10 ozs.	1.30	12 ozs.	1.50	14 ozs.	1 80	1 lb.	1 90
248—	Pipe Brace	13 ozs.	.50	13 ozs.	.64	14 ozs.	76	15 ozs.	76
252—	Handle Brace	16 ozs.	50	17 ozs.	64	18 ozs.	76	24 ozs.	76
253—	Wood Roller	18 ozs.	90	19 ozs.	1.00	24 ozs.	1 00	27 ozs.	1 20
268—	Reel Complete	6½ lbs.	7.50	7 lbs.	8.50	7¾ lbs.	9 30	8 lbs.	10 00

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

†LAWN MOWER PARTS

*RUGBY—MODEL 1912

No. 560-9

No. 61—Right

No. 62—Left

No. B5—Right
No. B6—Left

Steel Pawl

Reel Complete

No. 1

No. 27

No. 2

No. 4

Cutter Bar Complete with Steel Blade

No. L. W.

Wood Roller

Handle Brace

PRICE LIST OF REPAIRS

Instructions for Ordering

1st—Give Number and Description of Part. **2d**—Always Give Name and Size of Machine.

Nos.	Name	Weight	Each
530-9	—Drive Wheels, both alike	5½ lbs.	**$1 40**
61	—R. H. Side Plate	3¾ lbs.	**1 40**
62	—L. H Side Plate	3¾ lbs.	**1 40**
B5	—R. H. Pinion	3½ ozs.	**.35**
B6	—L. H. Pinion	3½ ozs.	**.35**
4	—Roller Brackets	4¼ ozs.	**.30**
LW	—Wheel Washer	1 oz.	**.15**
113	—Wrench	3 ozs.	**.15**
2	—Cones, both alike	1 oz.	**.65**
S4	—Springs, both alike, for Ball Bearing Device	1 oz.	**.30**
27	—Ball Retainer, without Balls	1 oz.	**.30**
1	—Ball Cup	1 oz.	**.60**
RW	—Upper Handle Cap	1 oz.	**.15**
W	—Lower Handle Cap	3 ozs.	**.30**
547	—R. H. and L. H. Reel Braces	7 ozs.	**.60**
548	—Center Reel Braces	6 ozs.	**.60**
Steel Balls		⅜ oz. per Doz.	**.60**
Steel Pawls, both alike		½ ozs.	**.10**
Wood Handle Complete		8 lbs.	**.10**
Handle Grip Joint Bolt, with Nut		2¼ ozs.	**.10**
Handle Brace Bolt, with Nut		1¼ ozs.	**.10**
Wheel Bolt, with Nut		1 oz.	**.10**
Roller Bracket Bolt, with Nut		1 oz.	**.10**
Cutter Bar Adjusting Screw		1 oz.	**.10**
Cutter Bar Pivotal Screw		1 oz.	**.10**
Nut for End of Shrub Rod		1 oz.	**.10**
Rivets, all alike		¼ oz.	**.10**
Babbitt Castings, both alike for Ball Bearing Device		1 oz.	**.30**
Pins, both alike for Ball Bearing Device		1 oz.	**.10**

	14 inch		16 inch		18 inch		20 inch	
	Weight	Each	Weight	Each	Weight	Each	Weight	Each
Cutter Bar Complete	3 lbs.	**$0 25**	3½ lbs.	**$1.00**	4 lbs.	**$1.20**	4½ lbs.	**$1 40**
Cutter Bar Blade	10 ozs.	**.45**	12 ozs.	**.50**	14 ozs.	**.60**	1 lb.	**.70**
Spiral Blade	10 ozs.	**.30**	12 ozs.	**.45**	14 ozs.	**.50**	1 lb.	**.60**
Reel Complete	4½ lbs.	**2.10**	5½ lbs.	**2.10**	6 lbs	**2.10**	6½ lbs.	**2.10**
Shrub Rod	1½ lbs.	**.70**	1¾ lbs.	**.70**	2 lbs.	**.70**	2½ lbs.	**.70**
Handle Brace	14 ozs.	**.25**	1 lbs.	**.25**	1¼ lbs.	**.25**	1½ lbs.	**.25**
Wood Roller	3 lbs.	**.60**	2½ lbs.	**.60**	2¾ lbs.	**.60**	3 lbs.	**.60**

Items Marked † Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

MOUND CITY TRADE MARK

✠ LAWN MOWER PARTS

MOUND CITY TRADE MARK

*MOUND CITY MODEL 1912

No. 34-9B

No. 41 Right

No. 42—Left

No. B5—Right
No. B6—Left

Steel Pawl

No. 1 No. 27

Reel Complete

No. 2 No. 4

Cutter Bar Complete with Steel Blade

No. A

No. 3

Wood Roller

Handle Brace

PRICE LIST OF REPAIRS

Instructions for Ordering

1st—Give Number and Description of Parts. **2nd**—Always Give Name and Size of Machine.

Nos.	Name	Weight	Each
34-9B	Drive Wheels, both alike	37⁄8 lbs.	**$1 00**
41	—R. H. Side Plate	33⁄4 lbs.	**1.00**
42	—L. H. Side Plate	33⁄4 lbs.	**1.00**
B5	—Right Hand Pinion	31⁄2 ozs.	**.25**
B6	—Left Hand Pinion	31⁄2 ozs.	**.25**
3	—Pinion Caps, both alike	1 1⁄2 ozs.	**.10**
4	—Roller Brackets, both alike	4 1⁄4 ozs.	**.20**
A	—Wheel Washer	1 oz.	**.10**
113	—Wrench	3 oz.	**.10**
2	—Cones, both alike	1 oz.	**.25**
S4	—Springs, both alike, for Ball Bearing Device	1 oz.	**.20**
27	—Ball Retainer, without Balls	1 oz.	**.20**
1	—Ball Cup	1 oz.	**.10**
RW	—Upper Handle Cap	1 oz.	**.10**
W	—Lower Handle Cap	3 ozs.	**.20**
547	R. H. and L. H. Reel Braces	7 ozs.	**.40**
548	—Center Reel Brace	6 ozs.	**.40**
Steel Balls		1⁄4 oz. Doz.	**.40**
Steel Pawls		1⁄2 oz.	**.05**
Wood Handle Complete		3 lbs.	**.50**
Handle Grip Joint Bolt, with Nut		2 1⁄4 ozs.	**.05**
Handle Brace Bolt, with Nut		1 1⁄4 ozs.	**.05**
Spring Cotter for Wheel Axle		1 1⁄2 ozs.	**.05**
Roller Bracket Bolt with Nut		1 oz.	**.06**
Pinion Cap Machine Screw, with Nut		1 oz.	**.05**
Cutter Bar Adjusting Screw		1 oz.	**.05**
Cutter Bar Pivotal Screw		1 oz.	**.05**
Set Screw for Fastening Side Plate to Axle Rod		1 oz.	**.05**
Rivets, all alike		1⁄4 oz.	**.05**
Babbit Castings, both alike for Ball Bearing Device		1 oz.	**.20**
Pins, both alike for Ball Bearing Device		1 oz.	**.05**

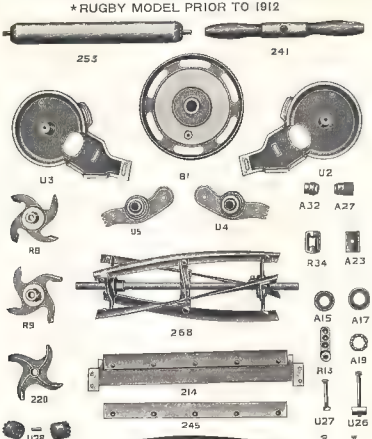
	12 inch		14 inch		16 inch		18 inch	
	Weight	Each	Weight	Each	Weight	Each	Weight	Each
Cutter Bar Complete	2 3⁄4 lbs.	**$0.50**	3 lbs.	**$0.60**	3 1⁄2 lbs.	**$0.70**	4 lbs.	**$0.80**
Cutter Bar Blade	9 ozs.	**.35**	10 ozs.	**.30**	12 ozs.	**.35**	14 ozs.	**.40**
Spiral Blade	9 ozs.	**.30**	10 ozs.	**.30**	12 ozs.	**.30**	14 ozs.	**.35**
Reel Complete	4 lbs.	**1 50**	5 lbs.	**1 50**	5 1⁄2 lbs.	**1 50**	6 lbs.	**1 50**
Shrub Rod-Axle	1 5⁄8 lbs.	**50**	1 3⁄4 lbs.	**.50**	2 lbs.	**50**	2 1⁄4 lbs.	**50**
Handle Brace	13 ozs.	**.15**	14 ozs.	**.15**	1 lbs.	**.15**	1 1⁄8 lbs.	**.15**
Wood Roller	1 3⁄4 lbs.	**.40**	2 lbs.	**.40**	2 1⁄4 lbs.	**.40**	2 3⁄4 lbs.	**.40**

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

✠ LAWN MOWER PARTS

*RUGBY MODEL PRIOR TO 1912



PRICE LIST OF EXTRAS

Instructions for Ordering

1st—Give Number and Description of Part. **2d**—Always Give Name and Size of Machine

3d—Always Give Year of Manufacture; See Lower Side of Cutter Bar

Nos.	Name	Weight	Each
B 1—	Drive Wheel	5 lbs.	$2 90
U 2—	R. H. Side Plate	3¾ lbs.	2 30
U 3—	L. H. Side Plate	2⅝ lbs.	2 30
U 4—	R. H. Reel Hanger	11 ozs.	1 80
U 5—	L. H. Reel Hanger	11 ozs.	1 80
B 5	Wrench for Set Screw and Cone	5 ozs.	80
U 6	-R. H. Clutch and Pinion	4 ozs.	80
U 7	-L. H. Clutch and Pinion	4 ozs.	80
R 8—	R. H. Reel Head	13 ozs.	1 40
R 9—	L. H. Reel Head	13 ozs.	1 40
R13—	Roller Hanger	3 ozs.	.46
A15—	Ball Cup	2 ozs.	.44
A17	Cap for A15	3 ozs. Dozen	.24
A19	Ball Retainer	2 ozs. Dozen	.25
A21	Set Screw	1 oz. Dozen	.14
A23—	Handle Socket	2 ozs.	.24
U26—	Handle Bolt and Pin	2 ozs.	.36

Nos.	Name	Weight	Each
A27—	Adjustable Cone	½ ozs.	$0 90
U27	Bolt for Handle Braces	1 oz.	.14
U28—	Clutch Pin	2 ozs. Dozen	.14
U29—	Clamp Bolt for Reel Hangers	8 ozs. Dozen	.14
U30—	Pivot Screw for Reel Hangers	8 ozs. Dozen	.14
U31—	Stove Bolt for Cutter Bar	4 ozs. Dozen	.14
U32—	Screw Bolt for Roller Hanger	3 ozs. Dozen	.14
A32—	Stationary Cone	1½ ozs.	58
R34—	Handle Socket	4 ozs.	58
229—	Center Reel Head	9 ozs.	1 10
230—	Wrought Wheel Washer	5 ozs. Dozen	36
236—	Screw to Hold Wheel on	3 ozs. Dozen	10
241—	Handle Grip	8 ozs.	58
369—	Wrench	5 ozs.	46
Handle	Complete	2¾ lbs.	1 80
Balls,	3-16 inch	1 oz. Dozen	.14

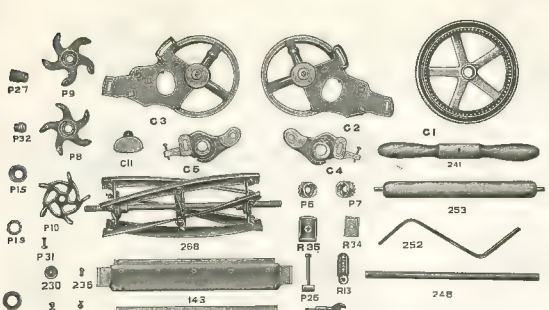
		14 inch		16 inch		18 inch		20 inch	
Nos.	Name	Weight	Each	Weight	Each	Weight	Each	Weight	Each
213—	Spiral Blade for Reel	8 ozs.	$1.80	10 ozs.	$ 2 20	12 ozs.	$ 2 30	14 ozs.	$ 2 50
214—	Cutter Bar Complete	2¾ lbs.	3.40	3½ lbs.	4 00	3¾ lbs.	4 50	4¼ lbs.	5 20
244—	⅜ inch Steel Brace Rod	8 ozs.	.86	9 ozs.	.88	10 ozs.	.88	11 ozs.	.90
245—	Blade for Cutter Bar	9 ozs.	1.80	11 ozs.	2.30	12 ozs.	2.30	14 ozs.	2 50
248—	Pipe Brace	12 ozs.	.66	13 ozs.	.80	14 ozs.	.90	16 ozs.	1 10
252—	Handle Brace	15 ozs.	.66	16 ozs.	.80	17 ozs.	.90	18 ozs.	1 10
253—	Wood Roller	16 ozs.	1.20	18 ozs.	1.30	19 ozs.	1.40	20 ozs.	1 50
268—	Reel Complete, 4 Knives	5¾ lbs.	9 00	6¼ lbs.	10 00	6¾ lbs.	11 50	7 lbs.	12 50

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

✣LAWN MOWER PARTS

*GOOD SERVICE



PRICE LIST OF REPAIRS

Instructions for Ordering

1st—Give Number and Description of Part. **2nd**—Always Give Name and Size of Machine.
3rd—Always Give Year of Manufacture; See Lower Side of Cutter Bar.

Nos. Name	Weight	Each
C 1 Drive Wheel	55½ lbs.	$3 40
C 2—R. H. Side Plate	4 lbs	2.90
C 3—L. H. Side Plate	4 lbs.	2 90
C 4—R. H. Reel Hanger	7 ozs.	1.80
C 5—L. H. Reel Hanger	7 ozs.	1.80
P 6—R. H. Clutch and Pinion	6 ozs.	.80
P 7—L. H. Clutch and Pinion	6 ozs.	.80
P 8—R. H. Reel Head	15 ozs.	1.80
P 9—L. H. Reel Head	15 ozs.	1.80
P10—Center Reel Brace	10 ozs.	1.20
C11—Gear Cover	4 ozs	.58
R13—Roller Hanger	4 ozs.	36
P15—Ball Cup	2 ozs.	46
P17—Cap for No. P15	3 ozs. Dozen	.24
P19—Ball Retainer	2 ozs. Dozen	.24
P26—Handle Bolt and Pin	5 ozs. Dozen	.24

Nos. Name	Weight	Each
P27—Adjustable Cone	3 ozs	$0 90
P28—Clutch Pin	2 ozs. Dozen.	14
P29—Clamp Bolt	8 ozs. Dozen	14
P31—Stove Bolt for Cutter Bar	4 ozs Dozen.	14
P32—Stationary Cone	1½ ozs	58
P33—Bolt for Handle Brace	1 oz	14
R34—Handle Socket	4 ozs	58
R35—Handle Saddle	3 ozs	58
P36—Stove Bolt for No. R13	3 ozs. Dozen	14
230—Wheel Washer	5 ozs. Dozen.	04
235—Screw to Hold Wheel on	5 ozs. Dozen	14
241—Handle Grip	10 ozs	58
369—Wrench	6 ozs	46
B5—Wrench for Set and Cone	5 ozs	36
Balls 5-16 inch	1 oz. Dozen.	14
Handle Complete	23¼ lbs	1 80

Nos. Name	14 inch Weight	14 inch Each	16 inch Weight	16 inch Each	18 inch Weight	18 inch Each	20 inch Weight	20 inch Each
143—Cutter Bar Complete	6 lbs.	$ 3.40	6¼ lbs.	$ 4 00	7 lbs.	$ 4 50	7¾ lbs.	$5 20
244—Steel Brace Rod	8 ozs.	.46	9 ozs.	58	10 ozs.	70	10 ozs.	80
245—Blade for No. 123	9 ozs.	1.80	10 ozs.	2 30	11 ozs.	2 30	12 ozs.	2.50
246—Spiral Blade for No. 268	10 ozs.	1.80	11 ozs.	2 20	13 ozs.	2 30	14 ozs.	2.50
248—Front Pipe Brace	12 ozs.	.70	13 ozs.	.80	14 ozs.	90	15 ozs.	1.10
252—Handle Brace	19 ozs.	.70	21 ozs.	.80	23 ozs.	90	25 ozs.	1.10
253—Wood Roller	16 ozs.	1 20	20 ozs.	1.30	24 ozs.	1 40	28 ozs.	1.50
268—Reel Complete (4 Blades)	7⅝ lbs.	10 00	8¾ lbs.	11.50	9 lbs.	12 50	9¾ lbs.	13 50

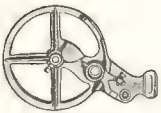
Items Marked ✣ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory

"DIAMOND EDGE IS A QUALITY PLEDGE"

✠ LAWN MOWER PARTS

* NORLEIGH

No. 780—10½ inches


No. 81—Right

No. 82—Left

No. B5—Right
No. B6—Left

Steel Pawl

No. 1

No. 27

Reel Complete

No. 2

No. 4

No. 3

Cutter Bar Complete with Steel Blade

No. LW

Wood Roller

Handle Brace

PRICE LIST OF REPAIRS

INSTRUCTIONS FOR ORDERING

1st—Give Numbers and Description of Parts. 2nd—Always give Names and Size of Machine.

Nos.	Name	Weight	Each
780-10½	—Drive Wheels, lock nut ke	[illegible] lbs.	$1 40
81	—R. H. Side Plate	3 "	1 40
82	—L. H. Side Plate	3 "	1 40
B5	R. H. Pinion	[illegible] oz.	40
B6	L. H. "	[illegible] "	40
3	—Pinion Caps, both alike	1 [illegible] "	20
4	Roller Brackets	4 [illegible] "	30
LW	—Wheel Washer	1 "	15
113	Wrench	3 "	.15
2	—Cones, both alike	1 "	65
S4	Springs, both alike for Ball Bearing Device	"	30
27	—Ball Retainer, without Balls	"	30
1	—Ball Cup	1 "	.60
RW	Upper Handle Cap	1 "	15
W	—Lower Handle Cap	.3 "	30
657	R. H. & L. H. Reel Braces	8 "	60
658	—Center Reel Braces	[illegible]	60
Steel Balls		[illegible] per Dozen	60
Steel Pawls, both alike		.2 "	10
Wood Handle, complete		3 lbs.	70
Handle Grip Joint Bolt, with Nut		2 [illegible] oz.	.10
Handle Brace Bolt, with Nut		1 [illegible]	10
Wheel Bolt, with Nut		1 "	10
Roller Bracket Bolt, with Nut		1 "	.12
Pinion Cap Machine Screw, with Nut		1 "	10
Cutter Bar Adjusting Screw		1 "	10
Cutter Bar Pivotal Screw		1 "	10
Nut for End of Shrub Rod		1 "	10
Rivets, all alike		[illegible] "	10
Babbitt Castings, both alike for Ball Bearing Device		1 "	30
Pins, both alike for Ball Bearing Device		1 "	10

	14 Inch		16 Inch		18 Inch		20 Inch	
	Weight	Each	Weight	Each	Weight	Each	Weight	Each
Cutter Bar, complete	3½ lbs.	$0 85	4 lbs.	1 00	4½ lbs.	1 10	5 lbs.	1 40
Cutter Bar Blade	10 ozs.	.45	12 ozs.	.60	14 ozs.	.60	1 lb.	.70
Spiral Blade	10 "	.30	12 "	.45	14 "	.50	1 "	.60
Reel complete	6½ lbs.	2 10	7 lbs.	2.10	8 lbs.	2 10	9 lbs.	2 10
Shrub Rod	1½ "	.70	1¾ "	.70	2 "	.70	2½ "	.70
Handle Braces	14 ozs.	.25	1 "	.25	1¼ "	.25	1½ "	.25
Wood Roller	2 lbs.	.60	2½ "	.60	2½ "	.60	3 "	.60

Items Marked ✠ Not Carried in Stock; Can Only be Furnished by Shipping Direct from Factory.

LITHOGRAPHED TRAYS

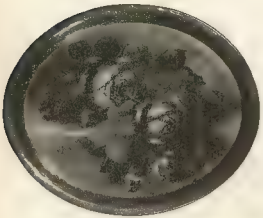
ASSORTED DESIGNS

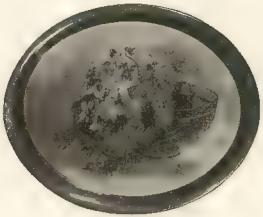
Beautifully Colored Designs and Portraits Lithographed on Heavy Steel Plates.

The Pictures are Real Works of Art; the Illustrations Give No Idea of the Delicate Coloring and Artistic Effect of the Originals.

They are Used for Decorative Purposes as Well as for Serving.

The Coloring is Permanent and the Tray Will Give Long Service.



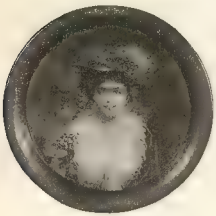


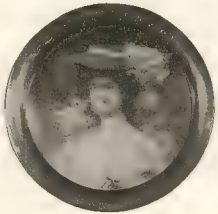
OVAL TRAYS

In Assortments of Four Designs

Per Dozen

No. 444—Size 10⅝x13⅝ inches; Assorted **Four Designs** as Shown Above; Sold Only in Equal Assortments; Weight per Dozen 11 lbs . . . **$5 40**
Three Dozen (Nine Assortments) in a Case; Weight per Case 44 lbs.





ROUND TRAYS

In Assortments of Two Designs Entitled "Types of American Beauty"

Per Dozen

No. 222—Diameter 13 inches; Assorted **Two Portraits** as Shown Above; Sold Only in Equal Assortments; Weight per Dozen 10⅓ lbs . . . **$5 40**
Three Dozen (Eighteen Assortments) in a Case; Weight per Case 38 lbs.

"Diamond Edge is a Quality Pledge"

WATCHES

GENTLEMEN'S WATCH ASSORTMENT

In **Leather Covered Case;** Silk and Velvet Lined; Size 9x6x1⅝ in.

Per Assortment

No. 6WC—Contains Six Beautiful 12 Size Swiss Watches with Interchangeable Jeweled Movements Extra Good Tune Pieces Assorted Dials, Gold Metal, Silver Metal with Raised Colored Figures and Black Dials with Gilt Figures, Gun Metal and Nickel Cases..... **$43 50**

One Assortment with Case in a Box; Weight 15⅝ lbs.

LADIES' FANCY WATCHES

In Fancy Plush Boxes

Each

No. 6—11 Ligne Open Face; **Enameled Back and Bezel,** Snap on; Gold Filled Rim; Jeweled Movement; Fancy Inlaid Foliage Decoration; Colors, Green, Blue or Turquoise; Complete with Pin and Plush Box. **$13 50**

Weight Each 3 ozs.

DIXIE TRAVELERS' WATCH

(Made by the New Haven Clock Co.)

One Day Time; Thin Model; 1⅛ inch **Dial;** Nickel **Case;** Stem Wind and Stem Set; **in Metal Cases** which can be Removed by Simply Pressing on the Dial of the Watch; Size of Case 2⅛ x 2 x 1 inch.

Each

No. 6N —With Nickeled Case..... **$2.50**
No. 6GM—With Gun Metal Case..... **2 50**
No. 6C —With Copper Case..... **2.50**
No. 6PB —With Polished Brass Case.... **2.50**
No. 6OB —With Old Brass Case..... **2.50**

One in a Box; Weight 4 ozs.

ASSORTMENT

Per Assortment

No. D6—Contains **Six** of the Above Watches; Two with Nickeled Cases and One Each Gun Metal, Copper, Polished Brass and Old Brass Cases..... **$14 50**

One Assortment in a Box; Weight 1½ lbs.

TRUSTY ALARM WATCH

Each

Trusty Alarm—Open Face; **Gun Metal Case;** Beaded Rim; Lid Hinged at Top to Act as Stand; Stem Wind and Set; Accurate Movement; Heavy Bevel Crystal..... **$13.50**

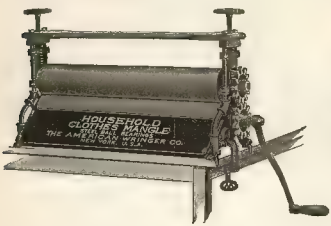
One in a Box; Weight Each 3 ozs.

To Set Alarm, Turn Bezel in Direction of Arrow, Which Will Move Brass Bar on Dial and Stop at Desired Time. To Silence Alarm Push Pin to S. Running Time with Alarm Active, 30 Hours; with Alarm Silent, 54 Hours

"DIAMOND EDGE IS A QUALITY PLEDGE"

CLOTHES MANGLES

For Wringing Sheets, Pillow Slips, Table Cloths, Bed Spreads, Towels, Napkins and Buttonless Articles; Pieces that Have Been Pressed are More Healthful than when Finished by a Hot Iron for the Meshes are Left Open, Whereas, the Hot Iron Closes them; Articles Pressed Retain their Original Whiteness and are Never Spoiled by Scorching.



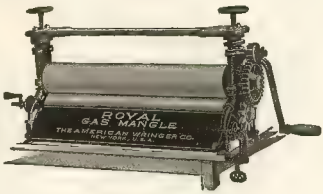
HOUSEHOLD, COLD ROLL

Especially Suited for Family Use and Where the Laundry Work is not very Heavy.

Each

No. H124—24x3¼ inch Hard Maple Rolls; **Ball Bearings**; Enclosed Spiral Steel, Adjustable Tension Springs; Painted Iron Frame and Adjustable Table Clamps; Open 1⅞ inches; Length of Handle Crank 12 inches; Weight in Case 55 lbs $9.40

One in a Case



ROYAL, GAS HEATING

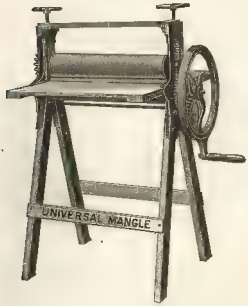
For Family Use; Ball Bearing

Can be Clamped to any Ordinary Table by Single Thumb Screw and Connected by a Rubber Tube to a Gas Burner; Adjustable for Natural or Artificial Gas.

Each

✢ No. R324—24x3¼ inch Rolls; Nickel Plated Steel Lower Roll, with Gas Burner Extending Full Length Inside; Hardwood Upper Roller Covered with Cloth; Width of Front and Rear Tables 5 inches; Purchase Gears Operate the Rolls, Causing them to Turn with very Little Power; Cast Iron, Frame and Gears, Painted Vermilion and Blue; Height 17 inches, Space Required 32x12 inches; Sweep of Handle 20 inches; Weight in Case 79 lbs... ..... $33.80

One in a Case



UNIVERSAL, COLD ROLL

Double Geared; Easy Turning

Adapted for Family, Hotel and Restaurant Use

Each

✢ No. U24—24x3½ inch Hard Maple, Smooth Finished Rolls; Width of Front Table 19 inches; Rear Table 12 inches; Hardwood Natural Finish Legs; Enclosed Spiral Steel Adjustable Tension Coil Springs; Painted Iron Top Frame; Height 45 inches; Floor Space Required 36x24 inches; Sweep of Handle 22 inches; Weight in Case 180 lbs..... $33.60

ECLIPSE, COLD ROLL

Adapted for Use in Large Families, Hotels and Small Laundries

The **Double Gearing** Makes Easy Turning and is Enclosed to Prevent Accident to the Operator.

Each

✢ No. E24—24x3¼ Inch Selected Hardwood, Smooth Finished Rolls; Width of Front and Rear Tables 12 inches; Strongly Braced Cast Iron Frame Painted Green; Mounted on Casters; Spiral Steel Adjustable Tension Coil Springs; Height 46 inches; Floor Space Required 34x29 inches; Sweep of Handle 22 inches; Weight in Case 275 lbs..... $42.00

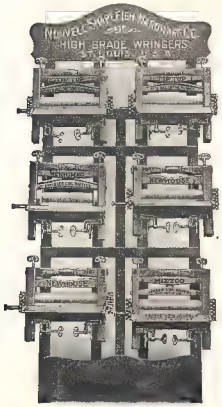
One in a Case

✢ Not Carried in Stock, Can Only be Furnished by Shipping Direct from Factory

CLOTHES WRINGER ASSORTMENTS

WITH DISPLAY RACKS

Stands are Strongly Made of Hardwood with Easel Back, Finished in Bright Colors and Gold Lettering with Brass Hooks for Hanging Wringers.



6 Wringer Assortment with Rack No B

SIX WRINGER ASSORTMENTS
With Rack No. B

Height of Rack 5 feet; Occupies 29x28 inches Floor Space

Per Assortment

No. 6J—Consists of Rack No. B and **6 Wringers** as Specified Below; Weight Complete 210 lbs. **$35.00**

Contains the Following Wringers:

1 No. U350 Universal	1 No. E350 Empire	1 No. R100 Rival
1 No. N300 Novelty	1 No. K310E Keystone	1 No. R101 Rival

Per Assortment

***No. 6K**—Consists of Rack No. B and **6 Wringers** as Specified Below; Weight Complete 210 lbs. **$31 20**

Contains the Following Wringers.

1 No. N167 Newhouse	1 No. M63 Merrimac	1 No. T50 Tip Top
1 No. N168 Newhouse	1 No M73 Merrimac	1 No. T51 Tip Top

Per Assortment

No. 6L—Consists of Rack No. B and **6 Wringers** as Specified Below; Weight Complete 210 lbs. **$39 00**

Contains the Following Wringers:

1 No R500 Royal	1 No. U351 Universal	1 No R190 Rival
1 No. C1050 Chemical	1 No. N300E Novelty	1 No. R191 Rival

Per Assortment

No. 6M Consists of Rack No. B and **6 Wringers** as Specified Below; Weight Complete 210 lbs. **$38 00**

Contains the Following Wringers:

1 No. R501 Royal	1 No. N391 Novelty	1 No R100 Rival
1 No. U351 Universal	1 No. K311 Keystone	1 No. R101 Rival

3 Wringer Assortment with Rack No. C.

SIX WRINGER ASSORTMENTS
With Rack No. A

Height of Rack 5 feet; Occupies 16x24 inches Floor Space

Per Assortment

***No. 3A**—Consists of Rack No. A and One Each Wringer No. M63 Merrimac, No. T50 Tip Top and No. M110 Mizzoo; Weight Complete 95 lbs. **$14 00**

No. 3B—Consists of Rack No. A and One Each Wringer No. R501 Royal, No. U381 Universal and No. R191 Rival; Weight Complete 95 lbs **20 50**

***No. 3C**—Consists of Rack No. A and One Each Wringer No. N168 Newhouse, No. T51 Tip Top and M11 Mizzoo; Weight Complete 95 lbs. **14 20**

THREE IRON WRINGER ASSORTMENTS
With Rack No. C

Height 3½ feet; Occupies 16x19 inches Floor Space

Per Assortment

No. 3D—Consists of Rack No. C and One Each Wringer No. S210 Superior, No. R330 Relief and No. 1D140 Ideal; Weight 100 lbs. **$15 70**

No. 3E—Consists of Rack No. C and One Each Wringer No. C130 Crescent, No. D100 Daisy and No. M10 Marvel; Weight 100 lbs. **12.60**

Stand Crated; Wringers Cased

3 Wringer Assortment with Rack No. A

"DIAMOND EDGE IS A QUALITY PLEDGE"

FIELDERS' MITTENS

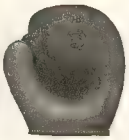
REACH

Per Dozen

No. R7N—Left Hand; Fine Black Calfskin Face; Black Tanned Leather Back; Padded with Best Felt; Strap and Buckle at Wrist; Patent Laced Thumb and Deep Pocket; Weight per Dozen 7½ lbs. **$16.00**

Per Dozen

No. R7B—Left Hand; Youths' Drab Finish Calfskin; Padded with Best Felt and Well Lined; Braided Cord Lace, Fastening at Wrist; Patent Laced Thumb and Deep Pocket; Weight per Dozen 7½ lbs. **$8.00**



Twelfth Dozen in a Box

FIELDERS' GLOVES

REACH

Per Dozen

No. R0BL—Left Hand; Finest Quality Drab Buckskin, Lined Throughout with Brown Sheepskin; Finest Felt Padding; Deep Hump; Web Thumb, Welted and Diverted Seams; Edges Bound with Brown Sheepskin; Strap and Button at Wrist; Weight per Dozen 12 lbs. **$54.00**

Per Dozen

No. R02—Left Hand; Brown Calfskin; Lined Throughout with Brown Sheepskin; Felt Padded; Deep Hump; Web Thumb; Welted and Diverted Seams; Edges Bound with Olive Sheepskin; Strap and Button at Wrist; Weight per Dozen 12 lbs. **$48.00**

Per Dozen

No. R0C—Left Hand; Light Weight Brown Calfskin; Best Felt Padded; Leather Lined; Welted Seams; Web Thumb; Patent Inside Hump; Strap and Button at Wrist; Weight per Dozen 10 lbs. **$42.00**

Per Dozen

No. R04—Left Hand; Black Calfskin; Black Leather Lined and Bound, Felt Padded; Welted Seams; Web Thumb; Patent Inside Hump; Strap and Button at Wrist; Weight per Dozen 10 lbs. **$39.60**

Per Dozen

No. R8WN—Left Hand. Black Calfskin; Asbestos Felt Padded; Web Thumb; Patent Inside Hump and Deep Pocket; Welted Seams; Strap and Button at Wrist; Weight per Dozen 10½ lbs. **$32.40**

Per Dozen

No. R88—Left Hand; Mouse Colored Buckskin; Asbestos Felt Padded; Welted Seams; Leather Lined; Patent Inside Hump and Deep Pocket; Web Thumb; Strap and Button at Wrist; Weight per Dozen 10 lbs. **$33.00**

Twelfth Dozen in a Box

All Fielders' Mittens and Gloves can be Furnished in Right Hand to Special Order Direct from Factory at Same Prices as Left Hand

"DIAMOND EDGE IS A QUALITY PLEDGE"

BASEMENS' MITTENS

REACH

REACH SPECIAL

Per Dozen

No. R3—**Left Hand;** Full Laced; Drab Buckskin; Best Asbestos Felt, Hand Formed Pads; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Leather Lacing; Weight per Dozen 15 lbs. **$66.00**

REACH SPECIAL
For Basemen or Pitchers

Per Dozen

No. RBF—**Left Hand;** Full Laced Drab Buckskin Face; Brown Calfskin Back and Fingers; Padded with Best Asbestos Felt; Patent Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Weight per Dozen 10½ lbs. **$54.00**

Per Dozen

No. R4L—**Left Hand;** Full Laced, Heavy Ecru Calfskin; Patent Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt; Weight per Dozen 15 lbs **$48 00**

Per Dozen

No. RR—**Left Hand;** Full Laced; Heavy Mouse Colored Buckskin Face; Back and Lining of Brown Tan Leather; Patent Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt; Weight per Dozen 13 lbs. **$32.40**

Per Dozen

No. R3RN—**Left Hand;** Full Laced; Made Entirely of Black Tanned Leather; Patent Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt; Weight per Dozen 12 lbs **$24 00**

Twelfth Dozen in a Box

Per Dozen

No. R3R Left Hand; Full Laced; Made Entirely of Craven Tan Leather; Patent Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt; Weight per Dozen 11 lbs. . . **$16 00**

FIELDERS' MITTENS

REACH

REACH SPECIAL

Per Dozen

No. RCF—**Left Hand;** Half Laced; Brown French Calfskin; Welted; Padded with Best Asbestos Felt; Strap and Buckle at Wrist; Patent Laced Thumb and Deep Pocket; Weight per Dozen 9 lbs. **$48.00**

Per Dozen

No. R6F—**Left Hand;** Pearl Colored Calfskin; Welted; Padded with Best Asbestos Felt; Strap and Buckle at Wrist; Patent Laced Thumb and Deep Pocket, Weight per Dozen 8½ lbs. **$32 40**

Twelfth Dozen in a Box

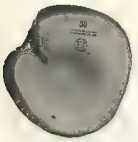
Per Dozen

No. R8F—**Left Hand:** Fine Olive Calfskin; Welted; Padded with Best Asbestos Felt; Strap and Buckle at Wrist; Patent Laced Thumb and Deep Pocket; Weight per Dozen 8¼ lbs. **$24 00**

Any of the Above Mittens Can be Furnished in Right Hand to Special Order Direct from Factory at Same Prices

CATCHERS' MITTENS

REACH



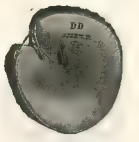
Per Dozen

No. R30—Left Hand; Half Laced; Finest Drab Buckskin Face and Fingers; Strip and Back of Brown Calfskin; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 26 lbs **$60.00**

Per Dozen

No. RBX Left Hand; Full Laced; Finest Brown Buckskin Face and Fingers; Strip and Back of Pearl Colored Calfskin; Decker Patent Sole Leather Finger Protector; Patented Lacing Device, Laced Thumb, Deep Pocket, Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad, All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Finger; Special Reinforced Back and Leather Laced; Weight per Dozen 25½ lbs **$54.00**

Twelfth Dozen in a Box

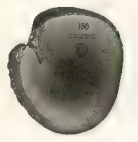


Per Dozen

No. RDD—Left Hand; Full Laced; Finest Drab Buckskin Face and Fingers; Finest Brown Tan Leather Back and Strip; Decker Patent Sole Leather Finger Protector; Large Model; Patented Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Weight per Dozen 26¼ lbs.. . . . . **$39.00**

Per Dozen

No. R200—Left Hand; Full Laced; Finest Moose Color Buckskin Face and Fingers; Fine Craven Tan Leather Back and Strip; Patented Lacing Device; Laced Thumb; Inside Hump; Deep Pocket; Strap and Buckle at Wrist; Weight per Dozen 24 lbs.. **$31.20**



Per Dozen

No. R150—Left Hand; Full Laced; Pearl Colored Calfskin Face; Fine Craven Tan Leather Back, Fingers and Strip; Patent Laced Thumb and Patent Deep Pocket; Strap and Buckle at Wrist; Weight per Dozen 25 lbs **$24.00**

Twelfth Dozen in a Box

Per Dozen

No. RFF—Left Hand; Full Laced; Fine Drab Finish Calfskin Face, Back and Fingers; Olive Tan Leather Strip; Patent Laced Thumb and Patent Deep Pocket; Strap and Buckle at Wrist; Weight per Dozen 22½ lbs..... **$18.00**

Per Dozen

No. R100—Left Hand; Bound Edge; Large Size, Men's Model; Fine Drab Finish Calfskin Face and Fingers; Brown Buck Finish Calfskin Back; Brown Leather Strip; Patent Laced Thumb, Deep Pocket; Weight per Dozen 18 lbs..... **$12 00**

Twelfth Dozen in a Box

Per Dozen

No. R65—Left Hand; Bound Edge; Large Size, Men's Model; Fine Drab Finish Calfskin Face; Fingers and Back; Olive Tan Leather Strip; Patent Laced Thumb; Patent Deep Pocket; Weight per Dozen 14½ lbs. **$8.00**

Quarter Dozen in a Box

Per Dozen

No. RM—Left Hand; Medium Size, Boys' Model Fine Drab Finish Calfskin Face, Fingers and Back; Olive Tan Leather Strip; Inside Hump; Patent Laced Thumb; Patent Deep Pocket; Weight per Dozen 12 lbs **$4.00**

Half Dozen in a Box

Any of the Above Mittens Can be Furnished in Right Hand to Special Order, Direct from Factory at Same Prices

"DIAMOND EDGE IS A QUALITY PLEDGE"

CATCHERS' MITTENS

REACH

Cut Shows Back of Full Laced Style Mitten Used on Nos. R6A, R5A, R4C, R2B, R32, RAS, R200, R150 and RFP.

Cut Shows Back of Half Laced Style Mitten Used on No. R30.

Cut Shows Back of Decker Patent Sole Leather Finger Protector Model Used on Nos. RBX and RDD.

REACH PROFESSIONAL

Per Dozen

No. R6A Left Hand; Full Laced; Brown Calfskin; Very Finest Quality; Face and Strip Made in One Moulded Piece; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 33 lbs. **$133.00**

REACH SPECIAL

Per Dozen

No. R5A—Left Hand; Full Laced; Finest Drab Buckskin Face, Finest Brown Calfskin Back, Strip and Fingers; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 27 lbs. **$120 00**

REACH SPECIAL

Per Dozen

No. R4C Left Hand; Full Laced; Made Entirely of the Very Finest Brown Calfskin; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 23½ lbs. **$120 00**

REACH SPECIAL

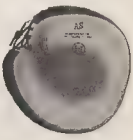
Per Dozen

No. R2B—Left Hand; Full Laced; Finest Black Calfskin Face, Back and Fingers; Brown Calfskin Strip; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 28 lbs. . . . **$102.00**

REACH SPECIAL

Per Dozen

No. R32—Left Hand; Full Laced; Finest Olive Calfskin Face and Fingers; Ecru Calfskin Back; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched; Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 28 lbs. **$84 00**



Per Dozen

No. RAS Left Hand; Full Laced; Finest Pearl Colored Calfskin Face and Back, Olive Calfskin Strip and Fingers; Patented Lacing Device; Laced Thumb; Deep Pocket; Strap and Buckle at Wrist; Padded with Best Asbestos Felt, Hand Formed and Sewed Pad; All Parts Double Stitched, Double Stiffening on Edge and Back to Protect Fingers; Special Reinforced Back and Leather Laced; Weight per Dozen 27¾ lbs **$78 00**

Twelfth Dozen in a Box

Any of the Above Mittens Can be Furnished in Right Hand to Special Order, Direct from Factory, at Same Prices

"DIAMOND EDGE IS A QUALITY PLEDGE"

CATCHERS' MASKS

*DIAMOND BRAND

MEN'S

OFFICIAL LEAGUE

Per Dozen

No. 350—Electro Welded; Black Rubber Enamel Finish; Special Steel Wire; Solid Welded Joints, Guaranteed not to Break, **Extension Neck Protector,** Padded; Fitted with Two Long Leather Face Pads and Forehead Pads; Filled with Felt and Laced Around Frame; Adjustable Forehead; Leather Chin Rest. This Mask Offers the Greatest Protection to Catchers and Umpires; Weight per Dozen 24 lbs.. . . . **$60.00**

PROFESSIONAL

Per Dozen

No. 300—Electro Welded; Black Rubber Enamel Finish; Special Steel Wire; Solid Welded Joints, Guaranteed not to Break; Fitted with Two Long Leather Face Pads and Forehead Pads; Filled with Felt and Laced Around Frame; Adjustable Forehead; Leather Chin Rest; Weight per Dozen 22 lbs. . . **$50.00**

AMATEUR

Per Dozen

No. 200—Electro Welded; Black Rubber Enamel Finish; Heavy Steel Wire; Solid Welded Joints, Guaranteed not to Break; Fitted with Two Long Leather Face Pads and Forehead Pads; Filled with Felt and Wired to Frame; Adjustable Forehead and Moulded Chin Rest; Weight per Dozen 21 lbs. **$40.00**

Per Dozen

No. 150—Electro Welded; Black Rubber Enamel Finish; Heavy Steel Wire; Solid Welded Joints; Fitted with Four Leather Face Pads Wired to Frame; Adjustable Forehead and Moulded Chin Rest; Weight per Dozen 21 lbs. **$30.00**

Per Dozen

No. 125—Electro Welded; Black Rubber Enamel Finish; Medium Weight Steel Wire; Solid Welded Joints; Fitted with Four Leather Face Pads Wired to Frame; Adjustable Forehead and Moulded Chin Rest; Weight per Dozen 16½ lbs. **$25.00**

Per Dozen

No. 100—Semi-electro Welded; Silver Luster Finish; Medium Weight Steel Wire; Fitted with Four Leather Face Pads Wired to Frame; Adjustable Forehead and Moulded Chin Rest; Weight per Dozen 16½ lbs. **$20.00**

YOUTHS' AND BOYS'

Per Dozen

No. 75—Semi-electro Welded; Silver Luster Finish; Medium Size Wire; Fitted with Long Leather Face Pads Wired to Frame; with Head and Chin Straps; Weight per Dozen 12¾ lbs. **$14.00**

Per Dozen

No. 50—Semi-electro Welded; Silver Luster Finish; Medium Size Wire; Fitted with Long Leather Face Pads Wired to Frame; Elastic Strap; Weight per Dozen 10½ lbs. **$9.00**

Per Dozen

No. 25—Semi-electro Welded; Silver Luster Finish; Light Size Wire; Fitted with Long Leather Face Pads Wired to Frame; Elastic Strap; Weight per Dozen 10 lbs. **$6.50**

All Masks Twelfth Dozen in a Box, Except No. 25, Half Dozen in a Box

"DIAMOND EDGE IS A QUALITY PLEDGE"

FIELDERS' GLOVES

REACH

Per Dozen

No. R2L—Left Hand; Pearl Color Leather; Welted Seams; Felt Padded; Leather Lined; Inside Hump and Deep Pocket; Web Thumb; Strap and Button at Wrist; Weight per Dozen 10 lbs **$25 20**

Per Dozen

No. R2N—Left Hand; Black Tanned Leather; Welted Seams, Felt Padded; Inside Hump and Deep Pocket; Web Thumb; Strap and Button at Wrist; Weight per Dozen 9 lbs..... **$21 00**

Per Dozen

No. R10C—Left Hand; Brown Tanned Leather; Felt Padded; Leather Lined; Web Thumb; Deep Pocket; Strap and Button at Wrist; Weight per Dozen 8¼ lbs **$16.00**

Per Dozen

No. R24—Left Hand; Drab Suede Buck; Padded; Inside Hump; Deep Pocket; Web Thumb; Strap and Button at Wrist, Weight per Dozen 6 lbs..... **$12 60**

Per Dozen

No. R18C—Left Hand; Craven Tan Leather, Inside Hump; Padded; Deep Pocket; Web Thumb, Strap and Button at Wrist; Weight per Dozen 3 lbs **$8 40**

Per Dozen

No. R24—Boys; Left Hand; Brown Tan Leather, Felt Padded, Leather Lined; Inside Hump, Web Thumb; Deep Pocket; Strap and Button at Wrist; Weight per Dozen 2½ lbs **$4 00**

All Fielders' Gloves, Twelfth Dozen in a Box, Except No. R18C, Quarter Dozen and No. R24, Half Dozen in a Box

All Fielders' Mittens and Gloves can be Furnished in Right Hand to Special Order Direct from Factory at Same Prices as Left Hand

"Diamond Edge is A Quality Pledge"

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*NORLEIGH DIAMOND

Norleigh Diamond Incandescent Lamps are made by the Latest Improved Machinery and by the Most Approved Method. They have been Submitted to the Electrical Testing Laboratories, 80th Street and East End Avenue, New York, whose Tests are Accepted by the United States Government, and are Approved by them.

CARBON "A" FILAMENT LAMPS

	Each
No. ND2 — 2 Candle Power, 90 to 130 Volts	$0.44
No. ND4 — 4 Candle Power, 90 to 130 Volts	.44
No. ND6 — 6 Candle Power, 90 to 130 Volts	.44
No. ND8 — 8 Candle Power, 90 to 130 Volts	.44
No. ND16—16 Candle Power, 90 to 130 Volts	.44
No. ND32—32 Candle Power, 90 to 130 Volts	.62
No. ND50—50 Candle Power, 90 to 130 Volts	.62

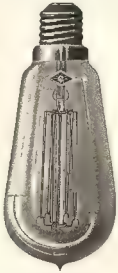
2, 4, 6, 8 and 16 C. P. Lamps, One Dozen in a Box. 32 and 50 C. P. Lamps, Half Dozen in a Box

240 in a Case; Weight per Case 45 lbs.

REFILLED CARBON FILAMENT LAMPS

	Each
No. 160—16 Candle Power, 90 to 130 Volts	$0.28

250 in a Case; Weight per Case 50 lbs.



TUNGSTEN FILAMENT LAMPS

Clear	Each	Frosted	Each
No. ND200— 25 Watts, 20 Candle Power, 100 to 125 Volts	$1 90	No. ND200F - 25 Watts, 20 Candle Power, 100 to 125 Volts	$2 00
No. ND320— 40 Watts, 32 Candle Power, 100 to 125 Volts	2.10	No. ND320F— 40 Watts, 32 Candle Power, 100 to 125 Volts	2.20
No. ND480— 60 Watts, 48 Candle Power, 100 to 125 Volts	2 90	No. ND480F — 60 Watts, 48 Candle Power, 100 to 125 Volts	3.10
No. ND800—100 Watts, 80 Candle Power, 100 to 125 Volts	3.70	No. ND800F—100 Watts, 80 Candle Power, 100 to 125 Volts	4.00
Nos. ND200 and ND320, 100 in a Case; Weight per Case 50 lbs.		Nos. ND200F and ND320F, 100 in a Case; Weight per Case 50 lbs.	
Nos. ND480 and ND800, 50 in a Case; Weight per Case 30 lbs.		Nos. ND480F and ND800F, 50 in a Case; Weight per Case 30 lbs.	

One Dozen in a Box

NOTE.—In Ordering Always Specify the Voltage. If You Do not Know the Voltage, Telephone the Electric Light Plant. **110 Volts is Regular.** All Above Lamps are Fitted for the Edison Socket, which is Standard. Extra Charge for other than Edison Base, 3 cents Net per Lamp. We can Furnish any Style, Size, Voltage or Color Lamp. Prices on Application.

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LAMPS

STREET—FOR KEROSENE

FOR USE ON POSTS OR BRACKETS

HANGING

WALL OR HANGING

Each

No. 3P—22 Candle Power; Extra Heavy; Cold Blast Tubular Construction; Self Extinguishing; Burns 24 hours; No. 3 Burner; 1¾ inch Wick; Height 26 inches; Painted Green; Weight 26 lbs. **$4.60**
One in a Case

Each

No. 2—16 Candle Power; Extra Large; Cold Blast Construction; Self Extinguishing; Burns 24 hours; No. 3 Burner; 1¾ inch Wick; Height 34 inches; Painted Green; Weight 35 lbs. **$12.50**
One in a Case

Each

No. 3H—22 Candle Power; Extra Heavy; Cold Blast Tubular Construction; Self Extinguishing; Burns 24 hours; No. 3 Burner; 1¾ inch Wick; Height 22½ inches; Painted Green; Weight 25 lbs. **$4.60**
One in a Case

Each

No. 26—Reflects 100 Candle Power; Cold Blast Construction; Burns Kerosene without a Chimney; 8 inch Reflector; Burns 17 Hours; No. 2 Burner; 1¾ inch Wick; Height 21¾ inches; Blue Japan; Weight 21 lbs **$10.00**
One in a Case

GLASS LAMP FOUNTS

Crystal Fount; Outside Filler; Clinched on Collar; Takes **No. 2 Burner**; Height to top of Collar 4 inches, Diameter of Base 4 inches; Capacity 1¾ Pints.

Per Dozen

No. 12—With Handle; For Hand Lamp, or in Chandelier and Bracket, Weight per Dozen 26 lbs. **$3.80**
Loose

Per Dozen

No. 13—Without Handle; For Chandelier and Bracket; Weight per Dozen 15 lbs..... **$2.50**
Loose

Glass Fount; Plaster Collar; takes **No. 2 Burner**; Height to top of Collar 3½ inches; Diameter of Base 4½ inches, Capacity 1 Pint.

Per Dozen

No. 14—With Outside Filler; Weight per Dozen 10 lbs..... **$2.00**
Loose

Per Dozen

No. 15—Without Filler; Weight per Dozen 9 lbs..... **$1.50**
Loose

GLASS SHADES

For Hanging, Store and Library Lamps

PLAIN OPAL GLASS

Per Dozen

No. 17— 7 inches Diameter; Weight per Dozen 14½ lbs..... $ 2 20
No. 110—10 inches Diameter; Weight per Dozen 18¾ lbs..... 5 00

GREEN GLASS

No. 27— 7 inches Diameter; Weight per Dozen 14½ lbs..... 9 40
No. 210—10 inches Diameter; Weight per Dozen 21 lbs..... 15 00

For Hanging and Mammoth Lamps

No. 314—Plain Opal Glass, Diameter 14 inches; Weight per Dozen 34 lbs $16 50
Loose

"DIAMOND EDGE IS A QUALITY PLEDGE"

Christmas Money and Prizes

For Success Club Boys and Girls

SUCH heaps and heaps of toys and special gifts are going to Success Club boys and girls this month! Old Santa's pack has never been so heavy as it will be this Christmas! For weeks I have been planning to make this the happiest Christmas my Success Club boys and girls ever have known I know how much you want to make spending money to buy Christmas gifts, and I am going to help you. If you join the hustlers' brigade of the Success Club *to-day* you will have *plenty* of Christmas money to buy dozens of beautiful gifts

The Club's Secret

"What shall I do to earn this money and the prizes, Cousin Alice?" I hear you ask. I can not tell you right here, for it is a secret of the Success Club, but I shall be glad to tell you about the Success Club and its fine work if you write me.

Every promise I make you will be fulfilled. WOMAN'S HOME COMPANION itself stands back of the Success Club and there are no disappointments and no dissatisfied members in this big club of ours. Success Club boys and girls are delighted with the *splendid chance that they have to make money*. Never was there such an opportunity to earn money and win beautiful gifts as there is right here in the Success Club

Here are just a few "straws" that show which way the wind blows around the Success Club camp:

"You and the Success Club are certainly the best ever. I wish I'd joined before. Already I've earned $10 00, a camera and a football. Now I am going to work and get those hockey skates. I know they'll be good because everything you've sent me has been top top!"

Jolly Prizes for Girls!

The girls are just as successful in the Success Club as their brothers. One girl is earning the money to pay for her music lessons and has won a music roll as well. Another one of the very young members of the Success Club—she is not quite nine years old - has won a box of paints and the "littlest" doll Dorothy. Here is a girl who is making Christmas gifts of pierced brass, using the Pierced Brass Outfit that she earned in the Success Club, and there is her friend who has won a sewing box and is busy embroidering sofa cushions and doilies.

Hundreds and hundreds of boys and girls have won watches and steam engines, tool chests and dolls, cameras and books, boxing gloves and games of all kinds. And hundreds and hundreds of other wide-awake Success Club boys and girls are putting their money into savings banks.

And here is another "straw." Others like this one will blow *your* way when you have joined the Success Club:

"Dear Cousin Alice

Last year at this time I earned one of your FLEXIBLE FLYERS. Oh, the fun I had coasting down hill! I earned one for my sister, too, and I tell you we did have a great time. The sleds are just as good this year as when I first got them. I have earned lots of things since then, but the Flyer I like best of all."

Win a Flexible Flyer!

Do you want a FLEXIBLE FLYER, too? You can have one! I have a great quantity of them that are all packed up just ready to go to lucky Success Club boys and girls who win them.

EVERY COMPANION boy and girl who wants to make spending money and win prizes and have lots of fun while doing it, should join the Success Club. *It doesn't cost a penny to become a member* There are no expenses of any kind. I have a place for every ambitious boy and girl and I shall be glad to welcome *you*. Write to-day, and find out about this Success Club that makes all good wishes come true. *Begin at once to make your Christmas money!* Write me and I will tell you how you can earn at least $5 00 before Christmas. Just a word on a postal-card will do. Success to you! Address

COUSIN ALICE, THE SUCCESS CLUB,
Woman's Home Companion, Madison Square, New York City

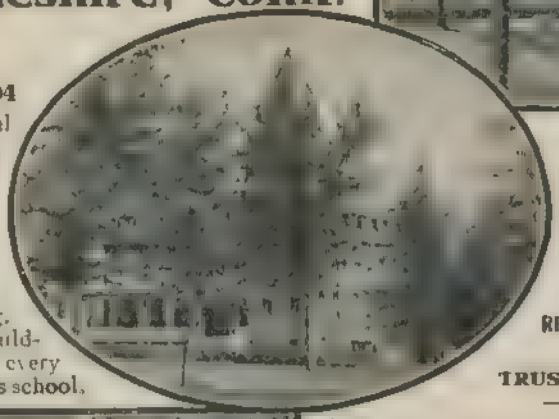
SCHOOLS & COLLEGES.

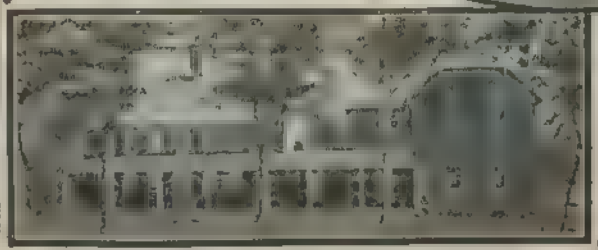
CONNECTICUT.

Cheshire School
Cheshire, Conn.

Founded A. D. 1794

Situated in the beautiful hill country of central Connecticut, ninety miles from New York City via N. Y., N. H. & H. R. R. College preparatory and general courses, combined with well directed physical training. Extensive property, fine buildings and athletic field; every appointment of a first class school.





Acquaint yourself with the advantages Cheshire offers before deciding upon a boarding school for your boy. Send for illustrated description and catalogue.

REV. JOHN D. SKILTON, M. A., HEADMASTER.

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OVERLOOK SCHOOL FOR BOYS.

A preparatory school for manly boys. Careful preparation for [illegible] All legitimate athletics encouraged. For circular, address

Major GEORGE WILSON,
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In a well-stocked farm of 350 acres. Rich out-of-door experiences, not merely athletics. Individual attention under experienced teachers. Thorough preparation for all colleges. A summer session for candidates for September examination.

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Are you thoroughly prepared for the [illegible] If not, write us at once for particulars of valuable assistance.

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THE CURTIS SCHOOL FOR YOUNG BOYS.

Thirty boys from ten to sixteen years old. No new boy received after [illegible] birthday. Each boy has a separate room. Price for one year $600.

FREDERICK S. CURTIS (Yale), Master
BROOKFIELD CENTER, Conn.

The Stamford Military Academy

(Formerly Stamford Academy for Boys)

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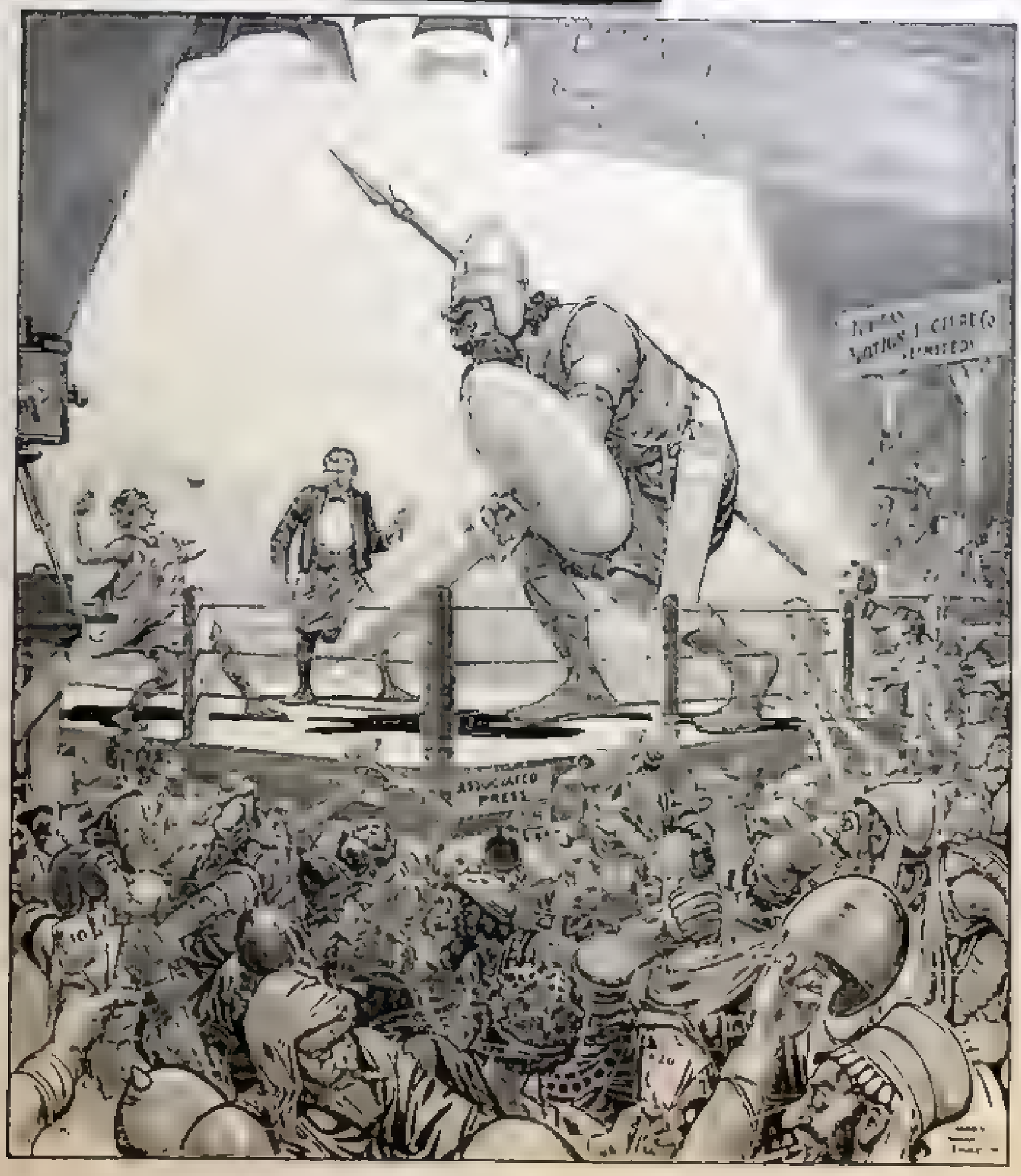
Ideal Home Boarding School. Splendid location; perfect sanitation. Each boy has own bedroom with running water. Opens September 27th; primary, grammar, high school, and special commercial courses; prepares boys 5 to 18 for college or business; competent teachers; athletic field of 23 acres surrounding school; pupils always under personal supervision; military drill. Address Dept. F for catalogue.



HISTORY AS IT MIGHT HAVE BEEN

DAVID AND GOLIATH

PATTERNS FOR HOLIDAY CLOTHES FOR DEAREST DOLLY

MISS GOULD PLANS A CHRISTMAS PRESENT WHICH WILL DELIGHT EVERY LITTLE GIRL

Of course, you dear mothers have already so hard a Christmas. Perhaps your little ... been begging you ... that must ... has been sending you wireless messages of what he is planning to do, though none of those ... ages from dear old ... been coming to me yet I have been wanting to have a part [illegible] a helpful part ... the coming Christmas festivities. This is one reason why I ... away ... the toe of her daughter's Christmas stocking. Of course every little girl w... naturally anything ... Dearest Dolly has ... Dearest Dolly has ... mentally, more ... been ... make little daughter happy, too. ... been thinking out, designing I should say, some very lovely new clothes for Dearest Dolly. Little daughter is sure to like them because it is going to make her feel so very grown up to be able to make her own Dearest Dolly's clothes and ... all ... mother uses when she is making her clothes.

The little patterns are to be ... and 22 inches high. This attractive ... write to the Pattern ... Madison Square, New York City ... pattern envelope contains nineteen ... Ten of these pieces belong to the ... the belt A, ... sleeve E, the ...

No. 1654—Dearest Dolly's Christmas Clothes

Pattern cut for dolls 14, 18 and 22 inches high. Quantity of material required for dress in this set of doll's clothes, for medium size, or 18 inches high, one yard twenty-seven-inch material with one half yard lawn for yoke and undersleeves. For coat, five eighths yard of twenty-seven-inch material and one fourth yard of velvet for collar and cuffs. For drawers, one fourth yard twenty-seven-inch material, with one half yard of lace. For petticoat, one half yard twenty-seven-inch materials, with two yards of lace. The price of this set of doll's patterns is ... Order from Pattern Department, Woman's Home Companion, Madison Square, New York City

To Make the Dress

Turn the ... waist ... backs ... crosses. Join the collar to the neck by notches. Gather the waist at lower edge between double crosses. Join the belt to the lower edge of the ... large round perforations at the sides of the belt to the underarm seams.

Gather the puff sleeve at upper and lower edges between the double crosses. Join the armband to the lower edge of the sleeve as notched.

Gather the cap sleeves at upper edge between double crosses and arrange over the puff sleeves, ...

... a little dress of this description you must follow some of the rules that are made for grown folks' clothes. One of these rules is: Always hold the ... at these two points, the plane part of ... smoothly in the arms ... up the gathers close ... remaining space. Distribute ... fullness evenly and pin very carefully before basting in the sleeve.

The arranging of the sleeve in the armscye is never easy to do, but it is particularly tedious in a doll's dress where the armscye is very small and the ... double. Take plenty of ... these lines. Then open each box ... the seam at the ... al pressing. Lap the fronts of th...

To Make the Coa...

SCHOOLS & COLLEGES.

CONNECTICUT (continued).

The Ely School for Girls

Greenwich, Conn.

The Ely School for Girls is one of the best equipped schools in the country. It gives the best possible mental, moral and physical training to its students. Beautifully located, overlooking Long Island Sound, and only 50 minutes from New York City. Building new and specially designed for the school. Perfect sanitation and pure water a feature. College Preparatory and general course. Modeling, drawing, choral and sight singing included in every grade. A Special Department for all branches of Domestic Science. Grounds 25 acres in area, laid out in beautiful walks and gardens and containing tennis courts, hockey and basket ball fields. Gymnasium. Athletics under experienced Director. Illustrated Catalogue containing full information sent upon request.

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Excellent equipment prepares for all colleges and scientific schools. Insures results. Its pupils good, hard work. Refers by permission to leading Christian Scientists throughout the country. For information, address

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STAMFORD, Conn

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In the highlands of Litchfield County. A home school for older boys. Limited to twenty. A large faculty enables us to give particular attention to each boy. Booklet on request

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FRANCES ELIOT HICKOX, Principal.
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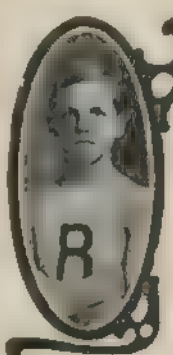
offers a healthful, happy home, with the best advantages for study and recreation

NORWICH, Conn.



Rumsey Hall

Cornwall, Litchfield Co., Conn.

A school for boys in the country.

Lower House for boys from seven to fourteen.

Upper House for boys above fourteen years of age.

Write for catalogue.

LOUIS H. SCHUTTE, M.A., Headmaster

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Suffield, Conn. 77th year.

College Preparatory and General Courses. Located in one of New England's most beautiful villages. Modern dormitories with separate school buildings. Exceptional scientific equipment. The training of the school is such that it develops self-control. Outdoor and indoor sports. Address

RALPH K. BEARCE, A.M., Principal, Box C.

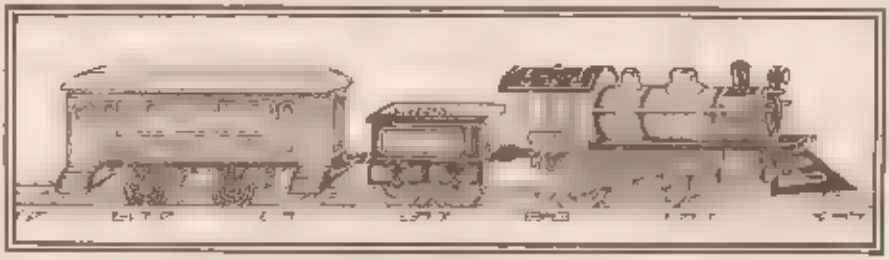
Children everywhere "watch the clock" for time to eat

CREAM of WHEAT

because they love it so.

A dainty breakfast
A delightful luncheon
A delicious dessert

GREAT WESTERN RAILROAD SYSTEM



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Mechanical Motor Train
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Railroad Equipment

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HARBUTT'S PLASTICINE MODELING OUTFITS.

A Mother's Helper

FOUR OUTFITS COMPLETE

AUNT JANET'S BOYS AND GIRLS

HOW TO BUILD A PRACTICAL GLIDER

BY HAROLD S. LYNN

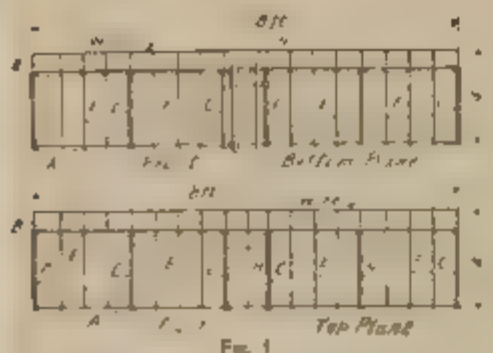


Fig. 1

A glider is a motorless aeroplane of the simplest form and is used for carrying a person in gliding flight through the air, from a high to a lower elevation. Although practically this is a new sport, it is one of the most thrilling and delightful that you could imagine.

It is a little hard to master control of [illegible] at first but when you have once [illegible] this difficulty, you [illegible] amply repaid for your trouble. A few ordinary tools and the following material will be all that you need to build one. Be sure to get well seasoned, straight grained spruce free from knots.

Four beams, three fourths [illegible] fourth inches [illegible] ten feet in length [illegible] eights or posts, three fourths [illegible] an inch thick, one and one [illegible] inches wide and four [illegible] inch thick, one inch wide and three feet six inches long. Thirty seven strips fourth of an inch thick, one half inch and four feet long. These last named strips are for the ribs of your [illegible] back and two inches wide by four rear, one inch square and twelve feet long.

You will need some extra three fourths inch square stripping and half a dozen short ribs two feet six inches long for the tail or rudders. Also procure the following: Six dozen three sixteenth inch stove bolts with washers on both ends, a supply of No. 16 piano wire, two dozen sockets and eye-bolts [illegible] 6t (Fig. 4). These may be obtained from almost any hardware [illegible] aeronautical [illegible]. For the sail planes you will need about twenty five yards of [illegible] sheeting.

Put the framework together with bolts, as they will not split the wood and will enable you to take your machine apart quickly for shipping or carrying or packing in small space. All the wood should be sand-papered and the corners rounded off slightly to cut down the wind resistance.

Put together and cover the two main planes first (Fig. 1). Lay out two beams (A and [illegible] nect them with three struts (C) four feet apart. This leaves a two-foot space in the center. When this is [illegible] wire the [illegible] ons th [illegible] ay (I Fig. 2). The [illegible] plane should have a [illegible] but this space must be left clear in the bottom plane. The ribs (E, Fig. 1) should next be placed one foot apart. Fasten one end to the front beam with small one inch brads, now bend it up in [illegible] the side view (Fig. 3) shows how the [illegible] ribs, and screw at [illegible] wire. The [illegible] is now ready [illegible] one side.

Fig. 2

The [illegible] main beams (A and B) where the struts or crosspieces join them (Fig. 4). The uprights (F) are fitted into these sockets and between the main planes are tightened [illegible] piano wire running diagonally from the eye-bolts in the sockets (Figs. 3, 4 and 5). Put the two short crosspieces (H, Fig. 1) and the two arm-rests in the bottom plane. The main part of the glider is now complete.

The vertical rudder (J, Fig. 3) is immovable and its object is to keep the glider headed into the wind. The horizontal rudder (K, Fig. 3) is likewise stationary, and its object [illegible] to keep the machine and keep it from diving. For tail or compound rudder see Fig. 6.

The two twelve foot strips (L) are fastened to [illegible] and rear beams (B) exactly feet back. Figs. 2, 3 and 6 show the method of wiring and bracing rudders. Use muslin covering with a thin layer of paraffin or thick starch to make it air tight.

Never take your glider out in winds blowing more than ten miles an hour and until you have learned to use it properly. It is best to use it only on sloping [illegible]

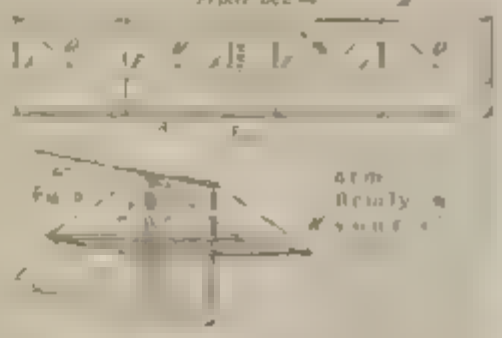
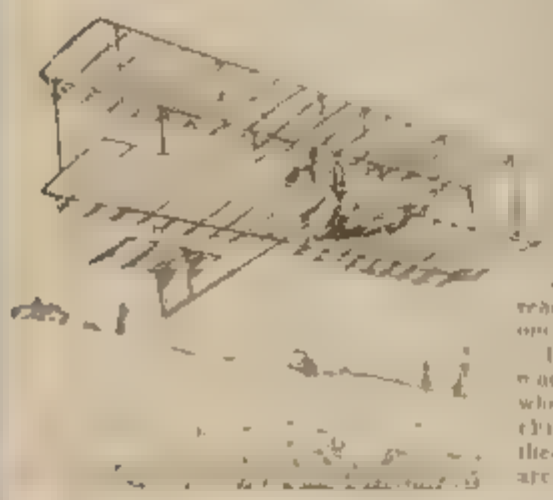


Fig. 3 Fig. 4



[illegible] cover ready [illegible] one side.

The sockets (G) are [illegible] main beams (A and B) where the struts or crosspieces join them (Fig. 4). The uprights (F) are fitted into these sockets and between the main planes are tightened [illegible] piano wire

[illegible] a few yards to the [illegible] one hill on your front [illegible] feet [illegible] to accelerate pushed by throwing your [illegible] back a little when the glider will [illegible] leaving its forward momentum and speed and soaring eastward.

The Howard Watch

THE Wireless operator prefers a Howard Watch because he must have accurate knowledge and record of the sending and receiving time of messages.

His station is seldom in a comfortable office building—it may be on a Battle Ship—an island—or a rocky point along the coast.

In more than one hundred and fifty highly specialized occupations the operatives will tell you that the HOWARD is purposely designed and adapted for their work.

Now a HOWARD is a HOWARD wherever you find it—the fact that men take it into the family, so to speak, and make it an honorary member of their trades or professions is the prettiest possible compliment.

A HOWARD Watch is always worth what you pay for it.

The price of each HOWARD from the 17-jewel in a fine gold-filled case (guaranteed for 25 years) at $35.00; to the 23-jewel in a 14-k. solid gold case at $150.00—is fixed at the factory, and a printed price ticket attached.

Drop us a postal, Dept. Q, and we will send you a HOWARD book of value to the watch buyer.

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Children every-
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time to eat
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WHEAT
because they love it so.
A dainty breakfast
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CREAM of WHEAT
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the clock" for
time to eat
CREAM
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WHEAT
because they love it so.
A dainty breakfast
A delightful luncheon
A delicious dessert

After the Game

There's nothing so refreshing and nourishing as

ICED POSTUM

(With Sugar and Lemon—as desired)

Postum is made of clean, hard wheat—and contains the Phosphate of Potash (grown in the wheat) which builds up nerve cells and

"Relieves Fatigue"

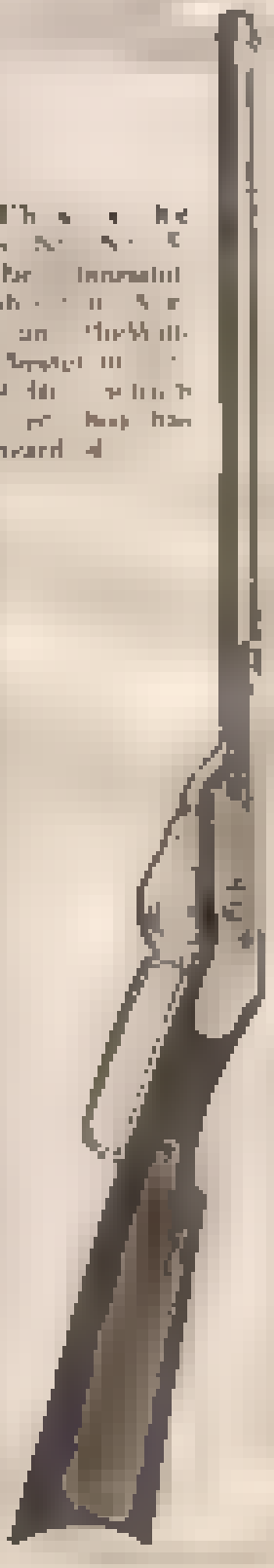
without the harmful reaction of coffee or tea—

"There's a Reason"

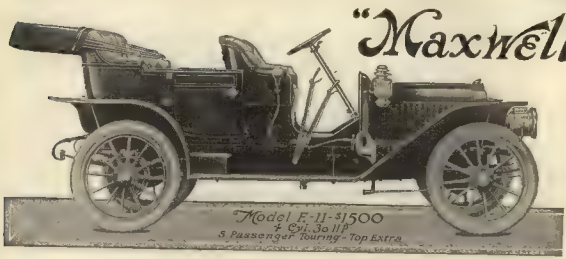
Postum Cereal Company, Limited, Battle Creek, Michigan, U. S. A.

"DON'T FORGET CREAM OF WHEAT"

KING AIR RIFLES



STEIN WOOLENS



New Models Ready *Now!*

A New Standard of Car Value

The Maxwell for 1911 is out! And again it has broken all precedents for the tremendous value it offers in a car of moderate price. It has always been big and roomy. It has always been known for its reliability at all times—its wonderful durability—its mechanical simplicity. In every respect it has always stood head and shoulders above other cars selling at anywhere near the price. But this year the strikingly attractive designs of the Maxwell and its many added refinements of equipment have created a still higher standard of Maxwell value.

Rational Speed, Luxurious Comfort

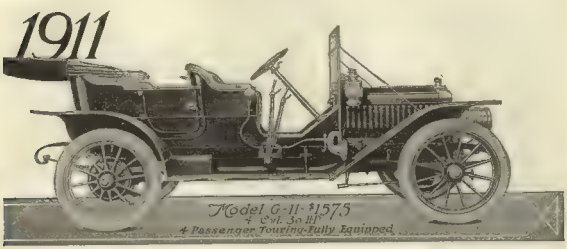
We believe in uniformity. The Maxwell is not built for speed to the exclusion of more vital motoring requirements. Beautiful appearance has not alone been attained to the sacrifice of mechanical efficiency. Our idea is equal reliability and superiority in every part—in a word—composite perfection. That's why the Maxwell doesn't break down first here and then there like many cars. They give years of staunch, durable service have an abundance of power—offer all the speed any sane driver could ask for or use.

"Maxwell" Sales to Date—35,479

MAXWELL-BRISCOE

DALE STREET

Licensed Under Selden Patent



Beauty in Every Line—And the Same MAXWELL—*Reliability, Simplicity* and *Durability*

Well Known Facts It is a well-known fact that the Maxwell is the great "Economy Car"—that our biggest touring cars "Can be run 5,000 miles a year at an average total cost of $3.98 a week." Nearly everybody knows of their perfect scores in grilling endurance contests—of the record the Maxwell holds for covering over 10,000 miles without having the engine stopped once. And you know it is just this kind of a car that you want for every member of your family a car that you can go out in any time and anywhere regardless of roads or weather conditions—and be sure that you will get back.

August-September Deliveries We will begin the deliveries of Maxwell 1911 models in August an unparalleled precedent in the history of motordom In this early delivery an in all respects the far-famed and much-copied Maxwell leads. Our tremendous manufacturing facilities make it possible To the many who are looking for the very best car they can buy at a moderate price—an August delivery holds out just one more inducement for the purchase of a Maxwell car. Our guarantee stands back of the delivery.

Helpful Automobile Literature **We want you to known all about automobiles. For the more you know about automobiles generally the more you will want a Maxwell. "How To Judge An Automobile" is a practical treatise which describes and illustrates automobile mechanism from the ground up. And our semi-monthly publication, "The Co-operator," keeps you posted fully on all motoring subjects. We will gladly send you these free, together with our beautiful new catalogue, showing all of the new Maxwell models—upon request. Mail postal to-day. Just say "Mail Books."**

MOTOR COMPANY

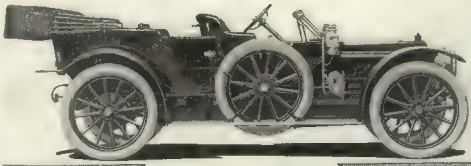
TARRYTOWN, N. Y.

Members A. L. A. M.

FACTORIES: New Castle, Ind. Kingsland Point, N. Y. Providence, R. I. Tarrytown, N. Y.

Rambler

Limited Output 1911



Rambler
Sixty-five

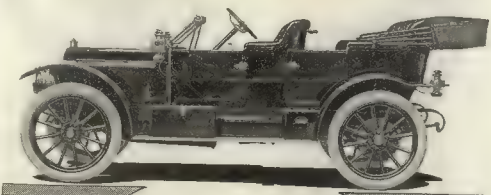
THE Rambler line for 1911 is complete, including landaulets, coupes, limousines, town cars, roadsters, toy tonneaus, and five and seven-passenger touring cars with detachable fore doors. Details and construction alike for all; two sizes, forty-five and thirty-four horsepower. Forty-inch wheels on all seven-passenger open cars; thirty-six-inch on all others. Every detail is refined, producing gratifying comfort and silence. Standard equipment with every model: Spare wheel and tire, shock absorbers, top and envelope, wind shield, five lamps, gas tank and tools.

The Thomas B. Jeffery Company
Main Office and Factory, Kenosha, Wisconsin
Branches Boston, Chicago, Milwaukee, Cleveland, San Francisco

New York Dealers: The Rambler Automobile Co. of New York, 38-40 West Sixty-Second Street, New York

Limited Output 1911

Rambler



Rambler
Sixty-three

NINETY-TWO per cent of all Rambler parts are made in the Rambler factory. Years of experience in cultivating painstaking habits of workmanship have created a standard of quality such that to actually make so many of the parts, even in a factory as large and completely equipped as the Rambler, the output must be limited. Prices, $2,175 to $4,140. Early deliveries. Complete information and catalog on request.

The Thomas B. Jeffery Company
Main Office and Factory, Kenosha, Wisconsin
Branches. Boston, Chicago, Milwaukee, Cleveland, San Francisco

New York Dealers: The Rambler Automobile Co of New York, 38-40 West Sixty-Second Street, New York

Car at Last
1910 BRUSH
$485.00

Read the Specifications

Motor—10 Horse-Power, *balanced* single cylinder, four-cycle, vertical, 4" x 5", water-cooled; located in front under hood, every part instantly accessible; three point suspension.

Balancing—After balancing by the usual counterweights, one extra loaded balance gear, driven by a crankshaft gear, is applied, the result of which is to take out *all* of the vibration due to reciprocating weight and in addition *most* (or at times *all*) of the torque vibration—theoretically *in better balance then a four-cylinder motor.*

Transmission—Internal gear type, perfectly quiet; entirely enclosed and absolutely oil-tight.

Cooling—Mercedes type radiator, on Briscoe thermo syphon system, eliminating pump.

Drive—Double side chains to rear wheels.

Control—Single hand-lever of selective action for all speeds; spark and throttle under steering-wheel; foot-pedal releases clutch without touching the hand-lever, and also applies the brake. This clutch released by the foot is one of the fine features of the Brush and is found on no other low-priced car.

Steering Gear—Another exceptional feature; internal reducing spur gear, slow and powerful at straight-ahead and accelerating as the wheel turns, entirely enclosed and oil-tight.

Axles and Frames—Oil-treated, selected wood, oak, hickory and maple; wonderful for strength, durability and lightness.

Springs—Spiral, located at extreme four corners; absolutely the easiest riding springs on any car and mechanically impossible to break.

Brakes—Internal expanding in rear sprocket hubs.

Wheels—Artillery, with 28" x 3" pneumatic tires

Wheel Base—80 inches.

Tread—56". For Southern trade, 60".

Equipment—Tools, tire kit, 3 oil lamps, horn.

Color—Maroon, except coupe.

Body—Divided seat; trimmed in high-extra leather Platform on rear, as pictured on opposite page, with equipment, $485.00.

Six special bodies, furnished on order, at extra prices, as follows: rear platform with steel tool box; rear compartment with removable steel deck; single or double runabout with wooden tool box; racer type; coupe.

Speed—35 miles an hour, except racer type, which has especial gearing.

MAIL THE COUPON TO-DAY

Brush Runabout Co.

212 Baltimore Ave.

DETROIT, MICH.

C. & A. 12

BRUSH RUNABOUT CO.
212 Baltimore Ave., Detroit, Mich.

Please send me a copy of the advance Brush Catalog.

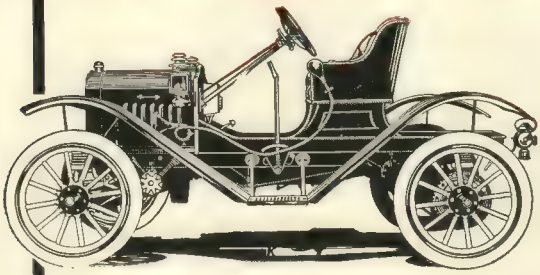
Name.....

Address .....

City .....

State .....

Everyman's



Think of it---$485 for the best-built, most thoroughly proven, easiest riding, most economical, handiest small automobile in the world

The New Brush Runabout not only outclasses all small cars, but is far ahead of its own previous high standard.

Even though we have learned the lessons all manufacturers have to learn by experience—even though we have manufacturing facilities as nearly perfect as money and brains can make them—still we could not build a car of the quality of the 1910 Brush if we merely imitated the big cars with all their complicated parts and all parts necessarily smaller and weaker.

Here's where the genius of the designer counts.

The Brush has always been and still is the only real Runabout built in America.

The new 1910 Brush is not a designer's dream but the result of years of experience and a knowledge acquired by manufacturing 3,000 Brushes that are in daily use. It is a car which with one chassis adapts itself perfectly by change of bodies to a hundred different uses.

It is a car new in power, smoothness, speed and looks, but built on proven principles by an organization already perfected.

The Brush has the fewest possible parts, but they are of sufficient size and strength to stand the hardest knocks.

Simplicity makes it possible to build the car right and still sell it at this wonderful price.

As for reliability, there is no comparison between the Brush and any of the small imitations of larger multi-cylinder cars.

With the new Brush you get single-cylinder simplicity, reliability, light weight, low gasoline and oil consumption, low tire expense with four-cylinder power and smoothness.

Its new balanced motor runs as quietly as a four-cylinder and is as flexible. Its power is astonishing.

The most wonderful improvement in Motor Car Construction in years.

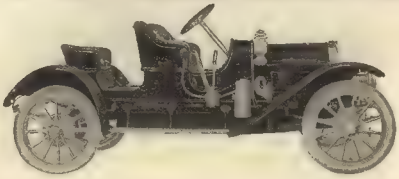
While the balanced motor is the most remarkable feature of the 1910 Brush, we have made numerous other improvements and refinements.

Here are some of them: wheel-base lengthened 6 inches; more graceful and rakish lines, Mercedes type radiator; new selective control; universal coupling-shaft; improved dust-proof commutator; multiple disc low and reverse clutches; transmission control levers entirely housed and oil-tight; more quiet muffler.

In our magnificent new plant we make every part of the Brush except the wheels, tires and electric equipment. The Brush buyer pays no middleman's or parts-maker's profit.

At Last, a Standard Car— At Half the Standard Price

Great Western FORTY



THE numbers in daily use in town and country are further evidence of the reliability you must insist upon if you wish satisfaction from any car.

TELLS IN CASH. This reliability means freedom from repair bills—It means your cost of upkeep is confined almost entirely to gasoline and lubricating oils. Your tire expense is low because of lightness, and because of the special springs, general construction and a steady motor. Not only is the purchase price within your reach but the cost of upkeep and the assurance of long life for your "40" makes it the most economical car on the market today.

A GUARANTEED CAR. The Great Western "40" is a **guaranteed car because** we make it ourselves. We know the quality of material and workmanship that enters into its construction. We are betting on a sure thing when we give you our broad guarantee.

With ample reserve power over and above the rated 40 H P. we have the added advantage of lightness which means an absence of tire troubles astounding to the man who has driven a heavy "pounder."

Except for the cylinders, pistons, fly wheel and exhaust manifold not an ounce of cast iron is used

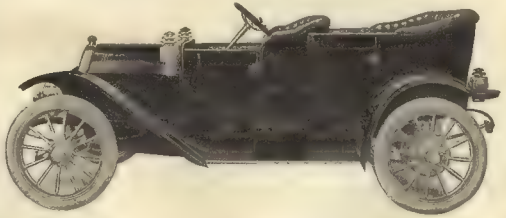
The most costly (because the lightest, strongest and most durable) aluminum, steels and bronzes are used for all other parts.

Simplicity of construction and a refinement of design; elimination of many parts found on less reliable cars—all tend to give the Great Western the strength, stability and reliability for which it is noted—and also help to make the low price possible.

Let us send you full particulars and arrange for a demonstration.

We have some territory open to dealers. A splendid business proposition for live men, for the Great Western "40" sells itself upon demonstration. Notice the line illustrated.

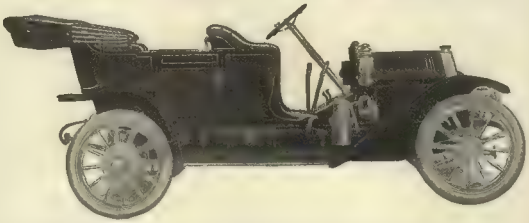
In addition we have a demi-tonneau body that is attracting much attention. Write today



Great Western Automobile Company, DEPT. 230 **Peru, Ind.**

Great Western FORTY

Facts You Ought to Know About the Car You're Sure to Buy

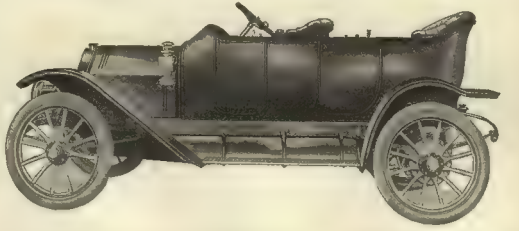


WAIT until they get cheaper! "Yes, like bicycles did." Did you ever carry one end of that conversation when discussing automobiles? You know you have—Automobiles have become cheaper, "like bicycles did"—and for the same reason—honest competition. You can buy automobiles today for so little money that you are instinctively suspicious of the quality—just as you can pay so much for a car that the price itself seems a guarantee of quality. Somewhere in between is the car of quality at a logical price—based on cost of manufacture, plus selling cost, and a fair profit to the maker.

That is the basis of the price of the Great Western "40" and it gives a dollar of automobile value for every dollar of price. You can buy a larger car (if you wish to seat more than five) you can buy more horsepower—if its possession is worth the cost to you—you may be as extravagant as you like, but you can't get a stronger, more reliable, speedier, or more beautiful car at any price. In the Great Western "40" you get all that you can get in any car, regardless of price or pretensions. With an extensive plant equipped with the most modern machinery and metal-working tools with an experience of 15 years in building gasoline motors up to 500 horsepower, with the full force of skilled workmen trained in the niceties of engine building, we entered the automobile field with no false notions as to the actual situation. The Great Western "40" is the result of our determination to build as good a car as could be built—to be sold at half the then prevailing prices. The 1911 models are ready for delivery.

These facts are Worth Money to You

It will be worth your while, whether you intend buying this season or next, to read the facts about the Great Western "40"—the $1600 car that won the Pittsburg Hill-Climb and then captured the Chancellor and Lyon perpetual trophy against cars selling for double. The car that stood the terrible trial of the 2851 mile Glidden Tour, finished in Chicago with the best of them. Back along the terrible roads of muck and cobble—in heavy swamps—at the foot of steep hills—in desert sands—all of which the Great Western had safely negotiated, were strewn the wrecks of cars costing up to twice as much as the "40"—unable to stand the hard conditions of the roads and the time requirements of America's Classic automobile event. This is merely an indication of the sturdiness of this grand car.



Great Western Automobile Company, DEPT. 230 Peru, Ind.

MARVEL CARBURETER
THE NAME DEFINES IT

The MARVEL CARBURETER has made good in every test---

It has substantiated the strongest claims ever made for a carbureter; every user of a MARVEL is an enthusiastic MARVEL convert, and why not?

The MARVEL has proved the best investment that they could possibly make. It enables them to run their car from two to sixty miles on high, regardless of the price of the car. It furnishes a perfect mixture to all throttles and uniform action, notwithstanding the low grade of gasoline supplied today or weather conditions. It has given them pleasure of motoring that was denied them when their car was equipped with the old style water-jacketed carbureter, which absolutely fails in its purpose, because its construction is wrong.

THE MARVEL INSURES A PERFECT MIXTURE because it is constructed on the only lines that permits of supplying a perfect mixture.

The MARVEL Uses Hot Gases Not Hot Water

THE MARVEL embodies a heating device that regulates the supply of gas automatically with the supply of fuel, one lever controlling both operations.

We throw just enough heat against the throttle to maintain the gas at a temperature that will give the most powerful explosions.

When you throttle down the gas begins to condense; that's the time the most heat is required; that's the time the MARVEL supplies enough heat TO PREVENT CONDENSATION; that's where the old style water-jacketed affair fails deplorably to give satisfactory service. When the throttle is opened, less heat being required, the MARVEL throws just enough heat to keep the gas uniform.

The old style hot water carbureter gets too hot on wide open throttle, when less heat is needed and is not hot enough on partially closed throttle. The hot water jacket carbureter will freeze in winter and often cracks the shell; and even if the shell is not cracked it will take several hours before circulation begins.

To have perfect carburation the supply of heat must be alternated to meet the throttle conditions. The MARVEL is the only carbureter that is constructed to do this, consequently

The MARVEL Is the Only Perfect Carbureter

The old style water-jacketed carbureter furnishes the same amount of heat at all throttles; its construction will not admit of its doing otherwise. To furnish excessive heat at open throttle enormous fuel consumption and big gasoline bills.

Discard the Water Jacket Carbureter—Use the MARVEL
Save gasoline and be assured of results that only a MARVEL can give

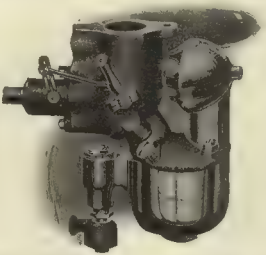
Marvel Carbureter Co., 2224 N. Alvord Street Indianapolis, Ind.

MARVEL CARBURETER
THE NAME DEFINES IT

This letter from one of our customers voices the opinion of every user of the MARVEL:—

"I have to advise that the carbureter shipped me several days ago has been installed on my car, and must join with the already satisfied users in saying that I am just beginning to get some real satisfaction and comfort in driving a motor car. I have gotten my car down to four miles an hour that was never below 10 to 12 miles. I have also started from standing start on high gear that was smoother in starting than the low. I am about to test this carbureter on fuel consumption and will advise you the results and my further experience in using this carbureter."

Perfect mixture at all throttles and uniform action, regardless of grade of gasoline or weather conditions



Will save its cost many times on gasoline bills.

Gives Wonderful Flexibility to Your Engine at All Speeds
Spend a few minutes investigating and save hours of trouble.

The Marvel Guarantee eliminates all risk; here's our proposition: Order a MARVEL, use it 30 DAYS; if it does not substantiate our claims—if it does not prove to your satisfaction that it is an absolutely perfect carbureter—return it and we will REFUND THE PURCHASE PRICE. Could anything be fairer? We are perfectly safe. You won't return it. Of all those put out under our guarantee not one has been returned. Every MARVEL is giving perfect satisfaction; there will be no exception in your case. Order a MARVEL on trial. Write us now.

When Ordering. If a manufacturer, state H. P. and size of intake pipe. If a dealer, cars handled. If an owner, name of car, year and model.

Specify the MARVEL on your new car and start right

Marvel Carbureter Co.

2224 N. Alvord Street
Indianapolis, Ind.

MARVEL CARBURETER
THE NAME DEFINES IT

The MARVEL CARBURETER

is ahead of the times and far in advance

of any other Carbureter, because it is the only Carbureter that is so constructed that it meets the difficulty presented by the low grade gasoline supplied to-day.

It is absolutely necessary that the fuel be heated and that the supply of heat vary with the speed of the engine and the regulation of the throttle.

The MARVEL incorporates in its construction an automatic heating device, which arranges for supplying the most heat when you throttle down, as at that time the gas begins to condense and a greater amount of the heat is required to prevent that condition. We throw just enough heat against the throttle to maintain the gas at about 110° F.

As the throttle is opened we reduce the heat supply just enough to keep the temperature of the gas uniform.

The MARVEL insures a perfect mixture, consequently a perfect combustion, and these insure **Maximum Efficiency, Minimum Fuel Cost, More Miles Per Gallon, Less Carbon Deposits, Freedom from Carbureter Troubles and a Decided Saving in Operating Expenses.**

Marvel Carbureter Co.,

2224 N. Alvord Street
Indianapolis, Ind.

MARVEL CARBURETER
THE NAME DEFINES IT

Users and Prospective Users of Commercial Vehicles:

To make your Truck Investment a paying one,

it must give service all the time, regardless of the condition of the weather. It must be able to deliver the goods on the coldest winter days. During cold weather the tendency of the vapor to condense greatly increases, it is at that time that a sufficient amount of heat must be supplied to prevent that condition.

The MARVEL positively prevents condensation.

by supplying enough heat when the most heat is required.

The old-style water-jacketed Carbureter is unable to furnish perfect vaporization, as it supplies the same heat at all throttles.

You should have your truck equipped with a MARVEL

You run absolutely no risk. Each MARVEL is covered by our positive guarantee that it will furnish a perfect mixture and combustion, will reduce your gasoline expenses, and will decidedly increase the power of your engine.

If it does not prove its superiority to you conclusively, we will REFUND THE PURCHASE PRICE at any time within thirty days.

WHEN ORDERING: If a manufacturer, state H. P. and size of intake pipe. If a dealer, cars handled. If an owner, name of car, year and model.

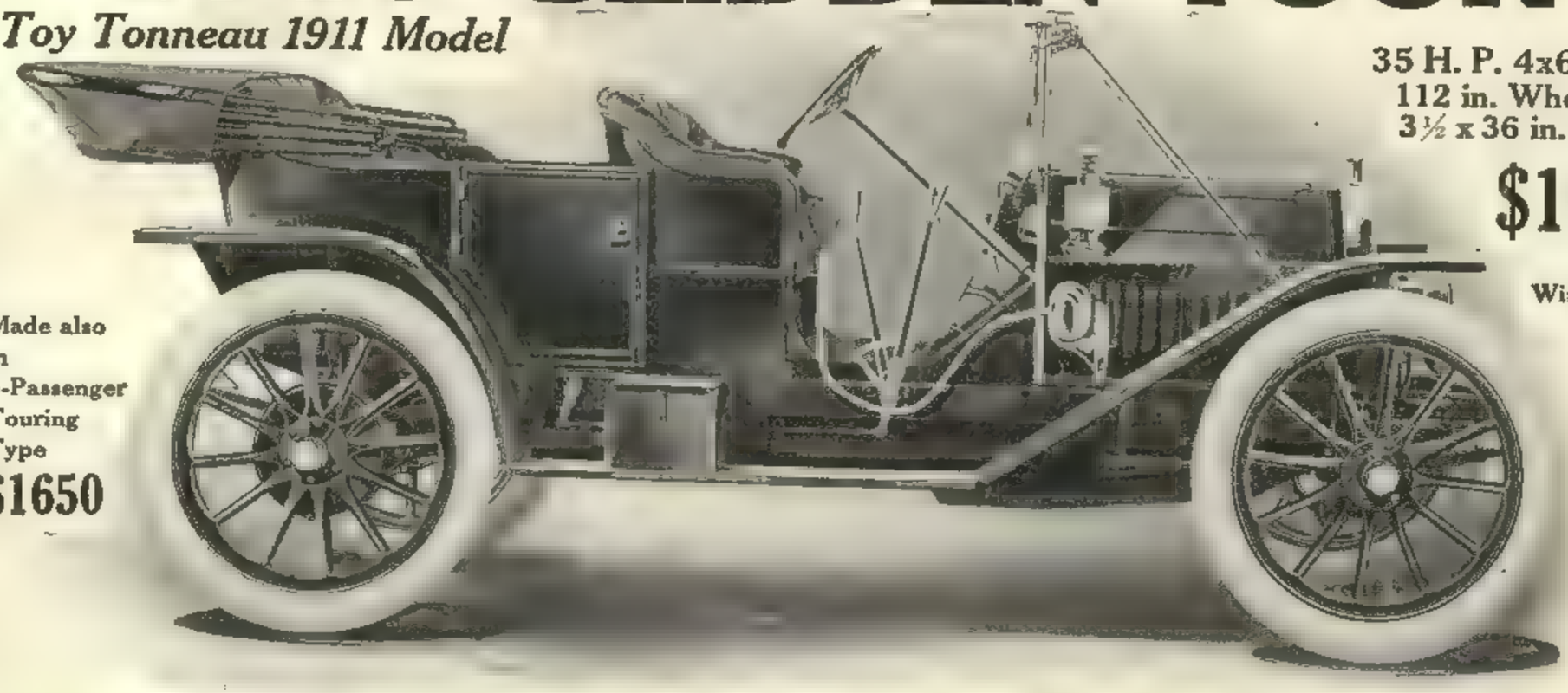
Special models for Ford, Buick 10 and Hupmobile cars. Ready to attach.

Marvel Carbureter Co.

2224 N. Alvord Street
Indianapolis, Ind.

Moline WINS Over Every Car Entered In the 1910 GLIDDEN TOUR

Toy Tonneau 1911 Model



35 H. P. 4x6 Motor
112 in. Wheel Base
3½ x 36 in. Wheels

$1600

Top and Wind Shield Extra

Made also in 5-Passenger Touring Type

$1650

Captures the *CHICAGO TROPHY* making the Best Road Score in that division and Best *FINAL SCORE* of any car in the Entire Tour.

Victorious in the Most Grueling Contest Ever Run

NEVER in the history of the Annual Glidden Endurance Run has men or machines been put to such a drastic, grueling grind as that experienced in the 1910 tour just ended.

Never in the history of this national automobiling event has any car ever finished with as high honors as the Moline No. 100, entered in the Chicago Trophy Roadster Division of this season's tour.

It finished the 2,850 miles with a total penalization of only 19 points, which is 72 less than the winner of the Glidden division.

It had a ***perfect*** control score, never being late a single time.

It was the only car which had a perfect brake score (except one) in the entire tour. Had it been entered in the Glidden Division it would have won the Glidden Trophy.

Herewith is the final score of the eleven cars which finished. It shows the ***decisive*** manner in which the Moline ***won over all*** regardless of size, horsepower, price or classification.

Final Score of Eleven Cars That Finished the Run

No.	Name	Penalties Points	Horse Power	Price
100	MOLINE	19	35	$1600
107	Competitor	51	30	1575
102	MOLINE	64	35	1600
1	Competitor	93	60	3500
5	Competitor	116	30	1500
7	Competitor	208	30	1525
101	MOLINE	481	35	1600
2	Competitor	806	40	2600
103	Competitor	2042	40	2500
10	Competitor	2247	45	2500
15	Competitor	2414	40	2250

Molines in Best Condition of All At the Finish

The condition of the cars at the end of such a strenuous run tells the story of the "stuff" they are made of, and when the final technical examination was made the committee's report showed the Molines to be in the ***best condition by far of any car in the entire tour.***

The ***total final penalties*** of the three Moline entries ***were less than any one car*** (except one) in the entire tour.

Never Touched a Tool

The showing of the Moline is all the more remarkable when it is known that all three cars came into Chicago with the ***official seals on their tool bags,*** placed there by the committee at the start of the tour at Cincinnati, and further,

Not a Single Extra Part Was Carried

repeating last year's performance in this respect ***and again, none were needed.*** No other car in this nor last year's tour ***dared*** to start without a full supply of extra parts. This feat, accomplished twice, certainly illustrates the ***absolute dependability*** of the Moline, especially considering the terrible road conditions of this tour and the added fact that we had ***absolutely***

No Motor Trouble	No Lubrication Trouble
No Magneto Trouble	No Ignition Trouble
No Clutch Trouble	No Axle Trouble
No Carburetor Trouble	No Frame Trouble
No Transmission Trouble	No Wheel Trouble
No Brake Trouble	No Spring Trouble

In short, we had ***no trouble*** of any consequence. The slight road penalties we received (12) were for loose radiator nuts and taking water and gasoline outside of control, which, considering the ***tropical heat,*** were to be expected.

There was never a more fearful, grueling grind attempted. We cannot describe the terrible roads, swamps, stumps, sand, stones, hills and streams. Added to this was heat as ***"hot as hades"*** and before many days passed the contest turned into one of elimination, as one by one the cars fell by the wayside ***forced to give up.*** At the end of the ninth day less than half of the contestants remained. Only 11 out of 26 starters finished the run.

What the 1911 Moline Affords the Buyer

The purchaser of the 1911 Moline will get the biggest value in ***proved automobile merit*** money can buy. He can pay more but he cannot equal the ***intrinsic worth*** embodied in the 1911 Moline as ***proved*** by this tour.

This season's model will be built in two styles ***Touring Car*** and ***Toy Tonneau*** five and four passenger, both on same chassis, same specifications. It will have

Larger Engine	Longer Springs
Larger Wheels	More Power
Larger Tires	More Speed
Longer Wheel Base	More Room
Longer Hood	More Style

Following is brief specifications. Compare them with others and you will realize the decided superiority of the 1911 Moline. Then, remember, the 1911 Moline has ***proved*** its merit in the most ***critical test*** ever imposed on an automobile and ***won over all competitors most decisively.***

Brief Specifications:

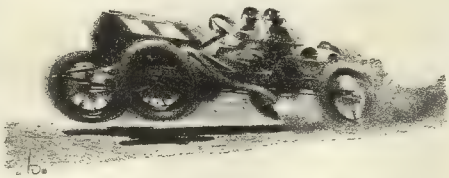
Power—horse power.
Motor—[illegible] bore, 6 in. stroke, water cooled, thermo-syphon circulation.
Drive—Shaft
Transmission—Vertical, selective, three speeds forward, one reverse. Full roller bearing
Rear Axle—Bevel gear
Front Axle—I Beam
Lubrication—Pressure combined with splash system.
Ignition—Double independent system
Control—Spark and throttle on steering wheel—foot accelerator—muffler cut-out
Brakes—14 in. double acting
Clutch—Leather faced, cone, cork inserts.
Wheels—12 spoke artillery
Tires—32x30.
Wheel Base—112 inches.
Price—$1600.

Moline Automobile Co. Licensed Under the Selden Patents 37 Root St., E. Moline, Ill.

Write for Advance Bulletin No. 37 and Story of This Interesting Glidden Run

THE MARMON

"The Easiest Riding Car in The World"



Fastest of the Vanderbilt Winners

THE Vanderbilt 1910 witnessed the closest finish ever seen in a road race when Dawson's stock Marmon came in 25 seconds behind Grant, the winner. The two had met before in the Cobe race which the Marmon won right handily

In the Vanderbilt Dawson drove the faster race mile by mile and lap by lap than his winning opponent, but lost six minutes when his car struck a spectator who had run out on the course

The following comparison of time for each lap tells the story.

The Time by Laps taken from Press Reports

Lap	Grant's time	Dawson's time	Dawson's lead—Minutes	Dawson's lead—Seconds
1	21 35	21 18	0	17
2	43 43	43 16	0	31
3	64 02	63 48	1	14
4	85 18	85 12	1	6
5	106 32	106 02	1	47
6	127 44	127 43	1	1
7	149 02	148 38	1	24
8	170 20	169 56	1	24
9	191 40	191 05	1	35
10	212 50	212 39	1	11
11	234 04	233 47	1	17
12	255 06	254 41	1	25
13	276 25	275 42	1	43
14	297 50	297 30	1	20
15	319 09	318 45	1	24
16	340 27	340 03	1	24
17	361 53	361 52	0	1

	Grant's time	Dawson's time	Grant's lead—Minutes	Grant's lead—Seconds
*18	207 50	211 54	4	4
19	233 01	235 21	2	20
20	252 08	254 19	2	13
21	244 35	246 19	1	44
22	258 08	259 22	1	14

*Dawson lost 6 minutes in the eighteenth lap on account of stopping to get information concerning a spectator he hit while spectator was on course where he had no right.

	Minutes	Seconds
Grant's average per lap	11	38
Dawson's average first 17 laps	11	20
Dawson's average last 4 laps	11	1

	Minutes	Seconds
Dawson's average per lap, bot including 18th lap, in which he lost six minutes account hitting spectator who was on course	11	17
Dawson's first lap was in	11	12
and he made 13 laps in this or better while Grant made only one lap in	11	12

Grant's average for the race was 85.1 miles per hour. Dawson's average for the first 17 laps was 86.26 miles per hour. Dawson's average for the last 4 laps was 86.3 miles per hour. Dawson's average, not including the eighteenth lap, in which he lost six minutes account hitting spectator who was on course, was 87.44 miles per hour.

NORDYKE & MARMON CO. (Estab. 1851) **Indianapolis, Ind.**

Licensed under Selden Patent — Sixty Years of Successful Manufacturing

THE MARMON

"The Easiest Riding Car In The World"

Closed Front, Five-Passenger
Touring Car, $2,750.

Not How "Big" But How "Good"

Proof of QUALITY not SIZE was demonstrated in the great AUTOMOBILE RACE, HELD IN PHILADELPHIA ON OCTOBER 8th, when a regular stock MARMON car broke the course record.

Just imagine a car of the price and the size of the MARMON competing with the largest and most expensive automobiles made, and making better time than any other automobile in the race.

Doesn't this convince you that it is unnecessary to buy tremendous horse power, which means, in turn, a large, heavy, costly and cumbersome engine, a heavy chassis and large, expensive tires, which represent continuous and great cost for maintenance? MARMON construction and quality have fully demonstrated that size alone does not represent SPEED and RELIABILITY.

The course over which the race was run in Philadelphia was a fraction over eight miles in circumference,—has innumerable sharp and dangerous turns and hills, and yet the MARMON was able to pass a large number of cars on this road and make the circuit in seven minutes and thirty-eight seconds,—thereby shattering all records for the course.

For SPEED and DEPENDABILITY the MARMON has surely demonstrated its SUPERIORITY and has proven conclusively that horse power is relative, and that SPEED and RELIABILITY are not necessarily confined to high-powered, high-priced cars.

These good qualities are not the only ones for which the MARMON is justly celebrated. It is a magnificent road car,—luxuriously appointed and comfortable riding. For literature and further particulars address

NORDYKE & MARMON CO. (Estab. 1851) **Indianapolis, Ind.**

Sixty Years of Successful Manufacturing — Licensed under Selden Patent

WOODS' ICE TOOLS

"ICE KING"
DAIRYMEN'S ICE PLOWS

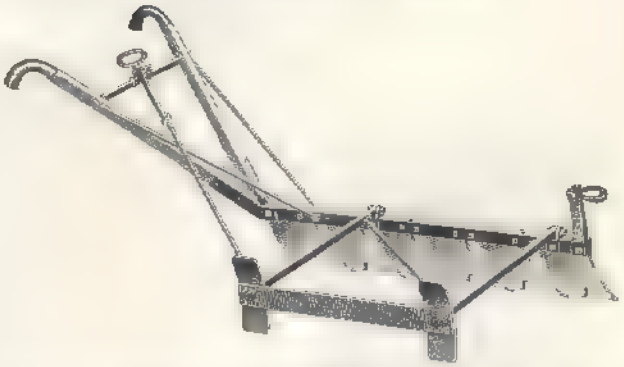


Fig. 9179A

Number		320	321	322
Depth of Cut	inches	8	10	12
Price	each	28 00	33 00	38.00

Five Cutting Teeth and Adjustable Swing Guide. Filed with a lead to cut $1\frac{1}{2}$ inches at a draft for a light horse. Can be easily filed for deeper feed.

BOSTON PATTERN ICE TONGS

14½ INCH 16½ INCH 18 INCH 24 INCH

Fig. 9179B Fig. 9179C Fig. 9179D Fig. 9179E

Size, inches	13	14½	16½	24
Price, No. 540, Solid Handle, per dozen	13 00	13 50	14 00	16.00

ICE HOOKS

Fig. 9179F

Length, feet	4½	5	6	8
Price, per dozen	9 50	10 00	10 50	12 00

ICE HOOK HANDLES

Length, feet	4½	5	6	8
Price, per dozen	1.80	2.40	3.00	4 00

WOODS ICE TOOLS

SOCKET ICE CHISELS

Fig. 9178A

Price, No. 468 Socket Chisel, Wood Handle.....each | 3.50

Weight, 4 pounds; length, 4 feet 10 inches; blade, 12x3 inches.

OMAHA PATTERN STARTING CHISELS

Fig. 9178B

Price, No. 106 Starting Chisel.....each | 3.50

Weight, 11½ pounds; length, 4 feet 7 inches; blade, 10x2¾ inches.

Made with a heavy, large cut head and blade perfectly straight on bottom side without upward curve.

CALKING BARS

Fig. 9178C

Price, No. 157, Hollow Handle.....each 2.50

Weight, 8 pounds; length, 4 feet 3 inches; blade, 14x4¾ inches.

BREAKING BARS

Fig. 9178D

Price, No. 454 Breaking Bar.....each 3.50

Weight 10½ pounds; length, 4 feet, 8 inches, Pad 7½x4¾ inches; Chisel Blade, 2¾ inches wide. Used for "breaking off" in a groove.

KNOB HANDLE SPLITTING FORKS

Fig 9178E

Price, No. 41 Light, 2 Tine, Splitting Fork.....each 1.00

Weight, 12 pounds; length, 4 feet 6 inches; tines, outside, 14 inches long.

PLATED WARE

1847 ROGERS BROS. XS TRIPLE

TIPPED PATTERN

TIPPED TEA SPOONS

Per dozen $4.25

TIPPED DESSERT SPOONS

Per dozen $7.50

TIPPED TABLE SPOONS

Per dozen $8.50

PLATED WARE

1847 ROGERS BROS. XS TRIPLE

TIPPED PATTERN

TIPPED FORKS

Dessert	Per dozen	$7.50
Medium	" "	8.50

TIPPED BUTTER KNIVES

Per dozen ---------- $10.00

TIPPED SUGAR SHELLS

Per dozen ---------- $8.00

races, which reduces wear and friction to a minimum.

Reduction in Weight of Motor.

With Mr. Twombly's construction, the size and weight of the motor is reduced 75 per cent. over the ordinary type, and at least 20 per cent. is added to its strength and efficiency. In the car shown, the 40 horsepower motor only weighed 206 pounds exclusive of a 60-pound fly wheel. It measures 17 by 17 inches in width and length, is only 8 inches high and has cylinders 5 x 5.

The Oiling System.

Every moving part is constantly flooded with oil, the surplus or overflow returning to the tank where it is used over and over again until exhausted. Each time it passes through the engine the oil is washed and strained, removing every particle of dirt and grit, so that it delivers clear, pure oil to the motor. The device is simple and requires no attention except to occasionally fill the oil tank. There is no waste and the motor is always properly lubricated as long as a drop of oil remains in the tank, with no oil showing in the exhaust.

Quick-removable Power Plant.

A power plant of simple and practical design may be removed from the chassis and replaced with a new one in from three to five minutes. This is made possible by its simple mechanical construction. All connections, such as coupling to the drive shaft, exhaust piping, gasoline piping, water connections, electrical connections, etc., being automatic, it is only necessary to loosen up two specially constructed lock-nuts on the front of the car to release the entire plant, which then slides easily out and is as easily replaced. The water cooler, muffler, pipe and all devices not liable to get out of order, remain fixed to the chassis. When the engine is removed the water in the cooler is automatically cut off and retained, and on replacing the motor the water is again turned on ready for use.

Convertible Automobile Body.

This body is made entirely of aluminum and glass, and is so constructed that it can be converted in two or three minutes, from an entirely closed, heated and ventilated limousine to an entirely open torpedo type touring body. The body consists of pressed steel sills, cast aluminum frame, detachable aluminum panels, cast aluminum doors, glass windows with wooden frames drop inside the body. The rear roof folds upon itself, while the corner pillars fold down, forming a finished back rail.

This body can be entirely closed. It is water-tight, heated and ventilated. The driver's compartment may be left entirely open, with passenger compartment entirely closed, or one or more windows may be dropped in passenger compartment leaving a canopy roof; or rear quarter may be entirely open, or the entire passenger compartment may be left open. In fact, there are numberless combinations not possible in any other type of body.

The advantages of the quick removable power plant are obvious. Under the present system of construction, it takes an experienced man and helper from two to twenty-four hours to remove the power plant from a machine, and as much longer to replace it; although it may take only an hour or so to make the repairs once the plant is removed. With the Twombly system the entire power plant or damaged part can be removed and replaced with another ready to run in less than 5 minutes. The damaged part can then go to the repair shop without laying up the balance of the machine, as a spare motor or transmission could be instantly slipped into place.

This is of tremendous importance to business men using delivery, express wagons, taxicabs and trucks. Take for instance an express company using 100 wagons. Under the present system they would have to purchase at least 25 additional machines in order to be sure of having 100 cars constantly ready for service.

Suppose a machine has started out with a load and something goes wrong with the power plant; another car is sent for to which the load is transferred, and still another machine is required to tow in the disabled car. The disabled car having been thrown out of commission while repairs are being made. Under the Twombly system this same company would purchase 100 complete cars, one light emergency wagon with a complete power plant on board is kept ready for call at any time, and a telephone call of a mishap to any of the cars would rush the emergency wagon to the spot, the injured part could be removed and replaced by a new one in five or ten minutes, and the original car should go about its business without transferring its load. The broken part could then be returned to the repair shop on the emergency wagon, put in running order and held for the next call.

THOMAS MAKES 2500 MILES ON HIGH GEAR

A 1911 Thomas 6-40 recently made a remarkable trip from Buffalo, through the hills and mountains of Pennsylvania, to Philadelphia, then to New York, New Haven, Boston, and return, with the transmission stripped of all but high and reverse. Not only was no difficulty encountered, but it is stated that a marked economy in gasoline was noticed.

The Waverley Co., of Indianapolis, Ind., has sold a Waverley Model 76 Victoria Phaeton to Solicitor General George Roger Harvey, of the Philippines.

General Harvey had been spending a few weeks' leave of absence at Los Angeles, Cal., and noticing the great popularity of electrics in that city, decided to purchase one for his use in Manila.

Twombly Car with Removable Power Plant and Quick Convertible Body

While automobile manufacturers are fond of stating that the motor car has arrived at practically a state of perfection, and that only minor refinements and improvements are possible, thousands of inventors and mechanics on both sides of the Atlantic are busy trying to design a perfect engine that will overcome a number of defects that exist in the gasoline motor as at present designed.

and substitute new ones in from three to five minutes, while the other is an automobile body so ingeniously arranged that it can be changed from a completely enclosed heated and ventilated limousine to an open car in less time than it takes to lower. or raise the hood of a landaulet.

Briefly, the Twombly motor differs radically from the standard type in that it uses four cylinders, run with a short two-throw

View of Twombly Car.

The ease with which this car can be dismembered is here shown. All connections such as the drive shaft, muffler, water, gasoline and electrical are made automatically.

W. Irving Twombly, a young mechanical engineer, after six years' intelligent study and persistent experiments, has perfected a light and simply designed car. It is almost certain that this engine on account of its small size, light weight and great power, should be of value in solving some of the problems which confront our aeronautical friends.

Neither the car nor the motor are mechanical freaks, but are sound mechanical ideas worked out on slightly different lines than those employed in present practice. That they are absolutely practical, Mr. Twombly and his backers are convinced, as they have spent over $250,000 in experimental work during the past six years, and now that they believe they have the car on a commercial basis, they have leased a big factory in Long Island City and will build cars for the market as soon as machinery is installed.

Features of the Car.

Two important features of the new car, irrespective of any question of the merits of the motor, are first, a removable power plant so arranged that it is possible to remove the motor, clutch and transmission

crank shaft, instead of one of the usual long four-throw variety. Not only this, but with the aid of a simple and practical device which does away with all connecting rods and permits the placing of two cylinders directly opposed on the same center, one piston is used for both. This is in fact a double acting motor having neither stuffing boxes, piston rods, cross heads nor packing of any kind, and really consists of only two cylinders and two pistons, but having the same torque and balance as a four cylinder motor.

The Cooling System.

This type of motor also makes it possible to place the cylinders below the water cooler, so that the necessity for a circulating pump is dispensed with, as the water is piped from the bottom of the cooler to the bottom of the motor, and from the top of the motor to the top of the cooler, allowing the water to flow freely from one to the other, the principle being the same as in a hot-water heating system. Another feature of the motor is that no plain bearings are used, all bearings being made of steel, hardened, ground and polished and having a true rolling contact with steel

ADZE EYE NAIL HAMMERS

ARTISAN S CHOICE, NICKEL PLATED, OCTAGON NECK, OCTAGON FACE, EBONIZED HANDLES

No 011

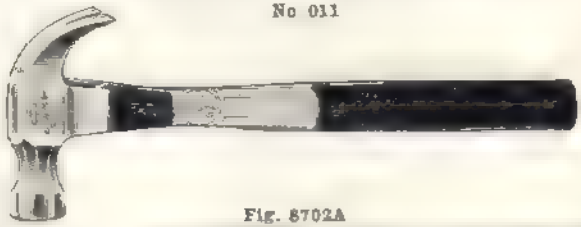


Fig. 8702A

Number		011
Size	number	1½
Weight		1 lb. 1 oz.
Price	per dozen	15.00

NICKEL PLATED, OCTAGON NECK, HICKORY HANDLES

Number		21	22
Size	number	1½	2
Weight		1 lb. 1 oz.	14 oz.
Price	per dozen	13 50	13 00

A. E. PLAIN FACE NAIL

No. 72

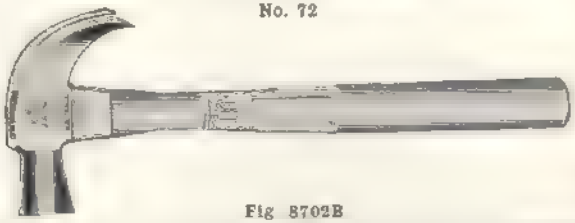


Fig 8702B

Number		72
Size	number	1½
Weight		1 lb.
Price	per dozen	8 .8

A. E. BELL FACE NAIL

No. 82

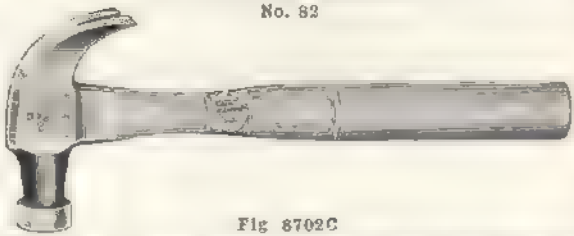


Fig 8702C

Number		81	82	83
Size	number	1	2	3
Weight		1 lb.	14 oz.	7 oz.
Price	per dozen	8 50	8 00	7 50

HAMMERS

ADZE EYE NAIL

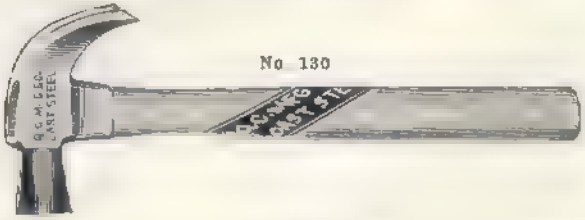


Fig. 8703A

Number		130
Size	number	1⅛
Weight	pounds	1
Price	per dozen	6.50

CAST IRON NAIL

Price, same style as No. 130		
Weight, 1 lb	per dozen	

ADZE EYE, BELL FACE NAIL

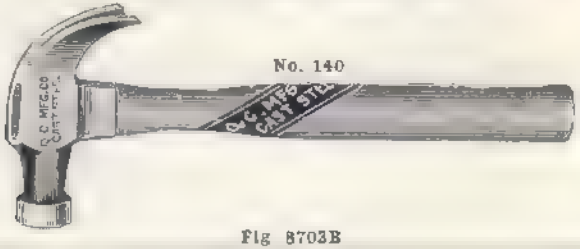


Fig. 8703B

Number		140
Size	number	1⅛
Weight	pounds	1
Price	per dozen	6 50

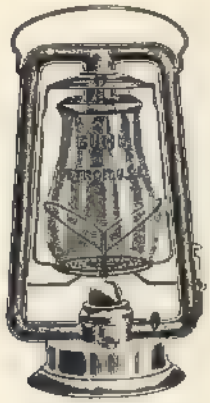
SHOE

Fig. 8703C

Number		451	452
Size	number	000	00
Weight	ounces	7	9
Price	per dozen	4.75	5 00

Weights do not include handles.

TUBULAR LANTERNS



BUHL NO. 17
Side Lift, Round Tubes
Bright Tin, No. 1 Burner.
⅝ in. Wick, No. 0 Globe.
No. 17 ..... Per dozen $6.00
One dozen in a Case.

DEITZ "VICTOR"
Side Lift, Square Tubes
Bright Tin, No. 1 Burner.
⅝ in. Wick, No. 0 Globe.
"Victor" ..... Per dozen $6.25
One dozen in a Case.

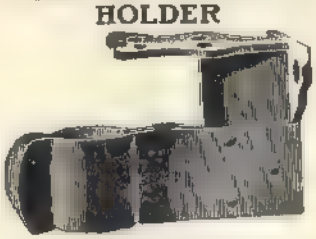
DIETZ "MONARCH"
Side Lift, Round Tubes
Bright Tin, No. 1 Burner.
⅝ in. Wick, No. 0 Globe.
"Monarch" ..... Per dozen $6.25
One dozen in a Case.

DIETZ "BLIZZARD"
Cold Blast
Side Lift, Round Tubes
Bright Tin, No. 2 Burner.
1 inch Wick, Blizzard Globe.
No. 2 Fount holds oil to burn 19 hours.
No. 2 Special holds oil to burn 25 hours.
No. 2 "Blizzard" ..... Per dozen $9.80
" 2 " **Special,** with Extra Large Fount, Per dozen 10.50
Half dozen in a Case.

DEITZ "BLIZZARD MILL"
(Cold Blast)
Side Lift, Round Tubes
Bright Tin, No. 2 Burner.
1 inch Wick, Blizzard Globe.
No. 2 "Blizzard Mill" Per dozen $24.00
Half dozen in a Case.

DIETZ "JUNIOR" BRASS
(Cold Blast)
Side Lift, Round Tubes
No. 1 Burner, ⅝ in. Wick.
Junior Globe.
"Junior" Brass Per dozen $15.00
One dozen in a Case.

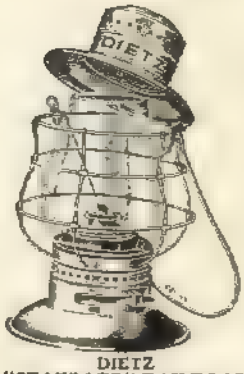
TUBULAR LANTERN HOLDER



Any Lantern of "Tubular" (not Cold Blast) pattern may be firmly secured under the vehicle, the Spring Clip permitting the easy removal of the Lantern when required.
"Dietz," Black Japanned Per dozen $3 00
One dozen in a Carton.

LANTERNS AND LAMPS

RAILROAD LANTERNS



DIETZ
"STANDARD" RAILROAD
Hinged Top. Double Guard

Bright Tin. Heavy 6¼ inch Base. Oil Pot has Bayonet Catch. No. 1 Ratchet Burner. No. 1 Screw Hoop. ⅝ inch Wick. No. 39 Globe.

No. **39** With White Globes. Per doz. $12.00
No. **39** With Ruby Globes. Per doz. 20.50

One dozen in a Case.

DIETZ
"VESTA" RAILROAD
(Cold Blast)
Hinged Top

Bright Tin. Oil Pot has Bayonet Catch. No. 0 Vesta Burner. ⅝ inch Wick. Vesta Globe.

Per doz.
"Vesta" With White Globes ... $17.00
"Vesta" With Ruby Globes ... 25.50

One dozen in a Case.

DASH LAMP

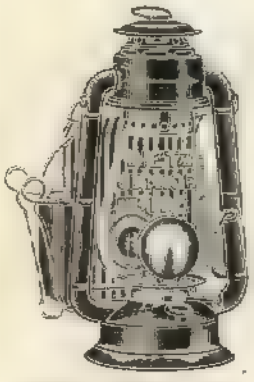
DIETZ "BUCKEYE" DASH
Side Lift

Blue Japan Finish. Bright Tin Corrugated Reflector, Bulls Eye Lens. Has a Bail and Spring Clip for Dashboard. No. 1 Burner. ⅝ inch Wick. No. 0 Globe.

"Buckeye". Per doz. $9.50

Half dozen in a Case.

SIDE LAMP



DIETZ "JUNIOR" SIDE LAMP (Cold Blast)

Black Japan Finish. Bright Tin Corrugated Reflector, Ruby Lens in Centre of Reflector for Rear Signal Light, Bulls Eye Lens. Clip Spring for use on Left Hand Side of Vehicle. Height, 12 inches. No. 1 Burner. ⅝ inch Wick. Junior Globe.

"Junior" Side Lamp,
Per doz. $15.00

One dozen in a Case.

DASH LAMP

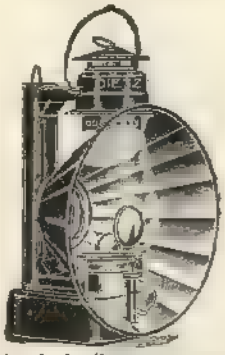
DIETZ "BEACON" DASH
Top Lift

Bright Tin. Bright Tin Hood 5 inches Deep. Silvered Glass Reflector 5 inches. Has a Bail and Clip Spring for Dashboard. No. 1 Long Cone Burner. ⅝ inch Wick. No. 0 Globe

"Beacon" ... Per doz. $21.00

Half dozen in a Case.

SEARCH LIGHT



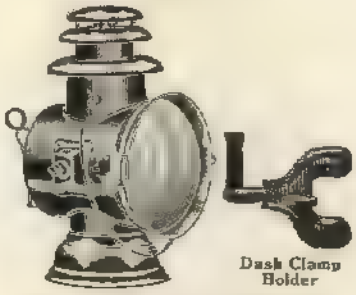
DIETZ NO. 30 "BEACON LIGHT"
Cold Blast) Bottom Lift

Blue Japan Finish. Bright Tin Reflector 7 inches Deep, 12 inches across. Bulls Eye Lens on Perforated Plate. No. 2 Blizzard Burner. 1 inch Wick. Blizzard Globe.

No. **30** **"Beacon Light,"**
Per doz. $28.00

Quarter dozen in a Case.

DRIVING LAMP



Dash Clamp Holder

DIETZ "UNION" DRIVING LAMP
(Cold Blast

Black Japan Finish. Removable Aluminum Reflector. Plain Lens. No. 0 Long Cone Burner. ⅝ inch Wick. Dash Clamp Holder.

"Union" Driving Lamp,
Per doz. $43.00

Half dozen in a Case.

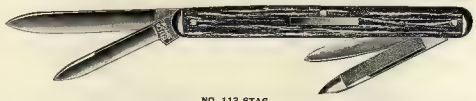
GERMAN POCKET KNIVES

NO. 6445S STAG

No. 6445S 2 Blades, Stag Handles, Iron Lined ..... Per dozen $4.00
" 6445B 2 " " Black " " " ..... " " 4.00

NO. 6450S STAG

No. 6450S 2 Blades, Stag Handles, Iron Lined ..... Per dozen $4.00
" 6450C 2 " " Cocoa " " " ..... " " 4.00



NO. 112 STAG

No. 112 4 Blades, Stag Handles, Brass Lined ..... Per dozen $8.00
" 111 3 " " " " " ..... " " 8.00

NO. 118 STAG

No. 118 4 Blades, Stag Handles, Brass Lined ..... Per dozen $8.00

NO. 100 PEARL

No. 100 2 Blades, Pearl Handles, Brass Lined ..... Per dozen $8.00
" 108 4 " " " " " With Name Plate ..... " " 8.00

NO. 105 PEARL

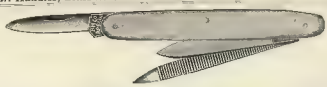
No. 105 2 Blades, Pearl Handles, Brass Lined ..... Per dozen $8.00
" 107 4 " " " " " ..... " " 8.00

Half dozen in a Box.

GERMAN POCKET KNIVES

NO. 104 PEARL

No. 104 2 Blades, Pearl Handles, Brass Lined ..... Per dozen $8.00



NO. 109 PEARL

No. 109 3 Blades, Pearl Handles, Brass Lined ..... Per dozen $8.00

NO. 110W WHITE BONE

No. 110W White Bone Handles, Brass Lined ..... Per dozen $8.00
" 110S Stag " " " ..... " " 8.00

NO. 301 PEARL

No.	8262W	4	Blades,	White Bone	Handles,	Brass	Lined	Per dozen	$8.00
"	8262S	4	"	Stag	"	"	"	" "	8.00
"	8262E	4	"	Ebony	"	"	"	" "	8.00
"	301	4	"	Pearl	"	"	"	" "	16.00

NO. 300 PEARL

No.	6316E	3	Blades,	Ebony	Handles,	3¼	inch,	Brass Lined. Per dozen	$8.00
"	6316W	3	"	White Bone	"	3⅝	"	" "	8.00
"	6316S	3	"	Stag	"	3⅝	"	" "	8.00
"	300	4	"	Pearl	"	3	"	" "	17.00

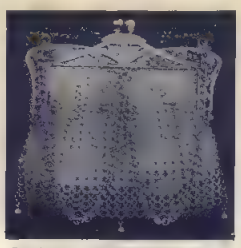
Half dozen in a Box.

LADIES' FINE GERMAN SILVER MESH BAGS

Heavy Silver Plated on German Silver, Latest and Popular Styles. PRICES EACH.

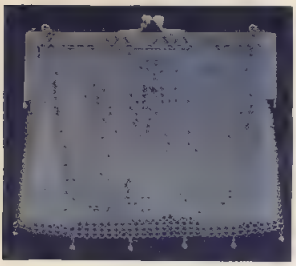
ILLUSTRATIONS ARE REDUCED SIZE.

Fine German silver, guaranteed hand made mesh, French gray etched frame, white kid leather lined with coin pocket.
No. 9233 5¾-inch frame. Each $10.25
No. 9234 4¼-inch frame. Each 8.25



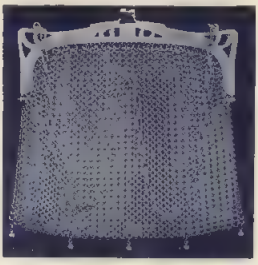
Fine German silver, guaranteed hand made mesh, French gray embossed frame, white kid lined, with coin pocket
No. 9235 4¼ inch frame. Each..... $5.00

Fine German silver guaranteed hand made mesh, French gray embossed frame, white kid lined, with coin pocket
No. 9236 5¾-inch frame. Each..... $10.50



Fine German silver, guaranteed hand made mesh, French gray embossed frame, white kid lined, with coin pocket.
No. 9237 7-inch frame. Each $10.50

Fine German silver, guaranteed hand made mesh, durable chain, width 6 inches
No. 9238 Each $10.50



Fine German silver guaranteed hand made mesh, French gray, hand-pierced and etched frame
No. 9239 5¾ inch frame. Each..... $8.50

Fine German silver, guaranteed hand made mesh, French gray, etched frame, white kid lined, with coin pocket.
No. 9240 7-inch frame. Each $10

All mesh guaranteed hand made.

When you compare prices, consider our supreme quality.

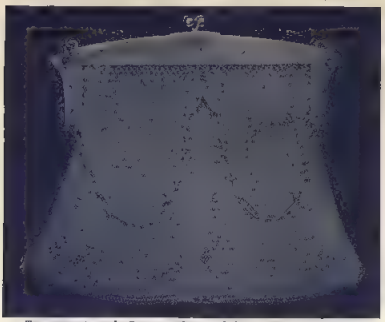
The most exacting attention given to all orders, regardless of amount involved.

We base all prices upon small profits thereby underselling our competitors.

Fine German silver, guaranteed hand made herringbone mesh, French gray embossed frame.
No. 9241 6¾ inch frame. Each $12.50

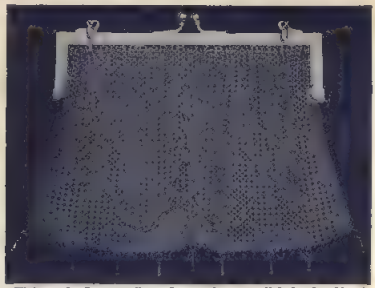
LADIES' FINE GERMAN SILVER MESH BAGS

Illustrations are reduced size. Heavy silver plated on German silver. Latest and popular styles. Prices each



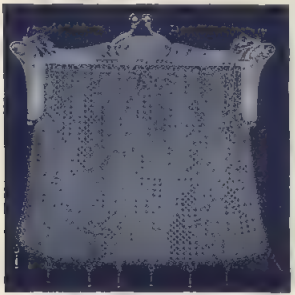
The finest grade German silver and finest extension mesh obtainable, every link hand soldered without seams. Artistically hand pierced and engraved French gray frame.

No. 9215	6¼-inch frame	Each $50 00
No. 9218	6¾-inch frame	Each 26 00
No. 9221	4¾-inch frame	Each 31 00



High grade German silver, fine mesh, every link hand soldered; satin finish frame.

No. 9218	6-inch frame	Each $28 00
No. 9219	6-inch frame	Each 24 00
No. 9220	4½-inch frame	Each 20 00
No. 9224	3-inch frame	Each 14 00



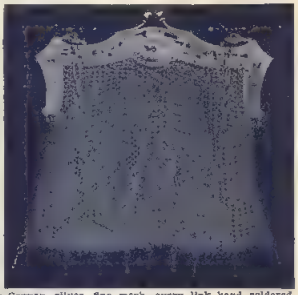
High grade German silver, fine mesh, every link hand soldered, French gray, beautifully carved frame.

No. 9222	6-inch frame	Each $26 00
No. 9223	5-inch frame	Each 18 00
No. 9224	4-inch frame	Each 12 00

Our Prices are based upon Small Profits

When you compare Prices, consider Quality

The Fine Soldered Mesh will wear as good and look as well as Sterling Silver

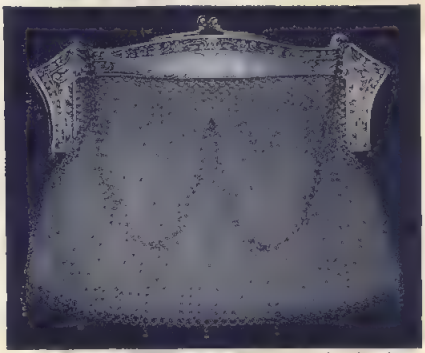


High grade German silver, fine mesh, every link hand soldered, French gray, artistically pierced and carved frame.

No. 9225	5¾-inch frame	Each $24 00
No. 9226	4¼-inch frame	Each 20 00

Fine German silver, guaranteed hand made mesh, embossed gray finish frame, white kid lined with coin pocket.

No. 9227	6¾-inch frame	Each $12 25
No. 9228	6¾-inch frame	Each 10 25
No. 9229	4½-inch frame	Each 7 25



Fine German silver guaranteed hand made mesh, embossed gray finish frame, white kid lined with coin pocket.

No. 9230	6-inch frame	Each $16 25
No. 9231	6¾-inch frame	Each 12 25
No. 9232	5¾-inch frame	Each 10 25

JOYCE-CRIDLAND PLAIN LEVER JACKS

Nos. 1 A, 2 A, 4 and 4 A

FIG 5419.

No. 4 Truck Box Jack

FIG 5420.

Nos. 38 and 39 Track

FIG. 5421.

Nos. 92 and 94 Track

FIG 5422.

Number	Height when Bar is down, Inches	Rise of Bar, Inches	Size of Bar, (Square) Inches	Weight of Jacks, Lbs.	Capacity, Tons	Price
1-a-Round Base	16	8¼	1¼	24	2	$10 00
2-a- " "	18⅝	10	1⅜	28	2	10 00
3 " "	11½	4	1⅜	27	4	10.00
4 " "	22⅛	14	1⅜	46	4	16.00
4-a- " "	18⅝	10½	1⅜	38	4	16.00
10 " "	27	16¾	1⅜	76	10	23.00
10-a- " "	22¾	11⅞	1¾	68	10	23.00
6 " "	26⅜	14	2	94	15	26.00
7 " "	35	25½	2	113	15	30.00

TRACK JACKS

Number	Height when Bar is down, Inches	Rise of Bar, Inches	Size of Bar, (Square) Inches	Weight of Jacks, Lbs.	Capacity, Tons	Price
38 Square Base	24⅛	11¼	1½	62	5	$15 00
39 " "	25½	12	1¼	82	10	20 00
92 " "	22½	14	1½	87	10	16 00
94 " "	37	16	1¾	80	10	28 00

JOYCE-CRIDLAND GEARED LEVER JACKS

Type of Nos. 193, 194, 195, 199, 200, 201 and 202

FIG. 5423.

By means of a gear and pinion interposed between the lever and lifting bar one man can lift with the same effort a weight four times as great as with the lever jacks.

No. 189. Truck Box Jack

FIG. 5424.

No. 183. No. 184 is similar but has a larger and round base

FIG 5425

FIG 5426

Nos.	Height When Down, Inches	Rise of Bar Inches	Rise of Bar Per Stroke of Level, Inch	Size of Bar Inches	Weight of Jack Pounds	Capacity, Tons	Price
180	11	4¼	⅛	2⅛x2	73	15	$35 00
183	25	15	⅛	2¼x2	112	15	40 00
184	25	15	⅛	2¼x2	112	15	40 00
189	24	15	⅛	2⅛x2¼	134	20	50 00
194	27	18	⅛	2⅛x2¼	145	20	50 00
195	33	22½	⅛	2½x2¼	165	20	55 00
199	22	12	¼	3 x2½	214	30	75 00
200	27	17	⅛	3 x2½	218	30	75 00
201	36	26	⅛	3 x2½	270	30	85 00
202	31	19½	¼	3 x2½	230	30	80 00

MINING JACK

This Jack is constructed especially for use in raising the roof timbers in the tunnels and entries of mines.

Two Jacks are used together, one being placed under where each end of the timber is to be. The timber is placed on top of the Jacks, and the Jacks run up until the timber is in position. Then the legs are placed and the Jacks removed ready for the next timber.

Height when down . 44 inches | Size of bar—square, 1½ inches
Rise of bar . . . . 5 " | Weight of jack . . . . . 60 pounds
Capacity . . . . . 4 tons
Price $20 00

Extra run, per inch, 10 cents.

CHICAGO CONCRETE MIXER

MOUNTED ON TRUCK WITH STEAM ENGINE AND BOILER, FRONT OR DISCHARGING SIDE, SHOWING SWINGING DISCHARGE SCOOP AND HOUSING OF GEARS

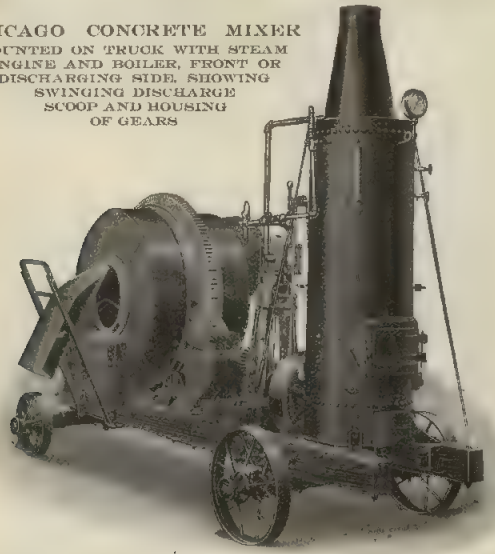


FIG. 5075.

The Chicago Concrete Mixer is equipped with Steam, Gasoline or Motor Power, mounted on trucks or skids. When ordering electric motor, give voltage and say whether power will be received over a direct or alternating current system

When gasoline engine is wanted, it is necessary to have friction clutch for Nos. 0, 1 and 2. This is placed on engine shaft at reasonable cost.

A superhopper is supplied with our mixers when desired. This feature should not be overlooked where a large amount of concrete is to be turned out. The workmen are loading the superhopper while the machine is turning out a batch. When the hopper is loaded, simply pull the latch and the entire batch is discharged into the mixer at once. This makes the Chicago Concrete Mixer a continuous batch mixer. It also enables one to double the output and therefore use a smaller mixer which is easier to handle and cheaper in price.

Number of Mixer		No. 00	No. 0	No. 1	No. 2
Standard charge in cubic feet	cement	⅛	1	1	2
	sand	1½	2½	4	8
	stone	3	5	8	16
Total unmixed batch in cubic feet		5	8¼	13	26
Mixed concrete per batch, loose in cubic feet		3¼	6	9	18
Cubic yards of unmixed material per hour, 45 batches per hour		8	14	21	42
Cubic yards of mixed concrete per hour, 45 batches per hour		6	10	15	30
Minimum horse-power required		2	4	6	8
Revolutions of driving pulley per minute		200	190	185	170
" " drum per minute		20	18	15	13
Diameter and face of driving pulley		20 x 3¾	20 x 4½	24 x 5¾	28 x 6¼

PRICES ON APPLICATION

CONCRETE MIXERS

IMPROVED UNITED CONCRETE MIXERS

1008 MODEL—DISCHARGE SIDE

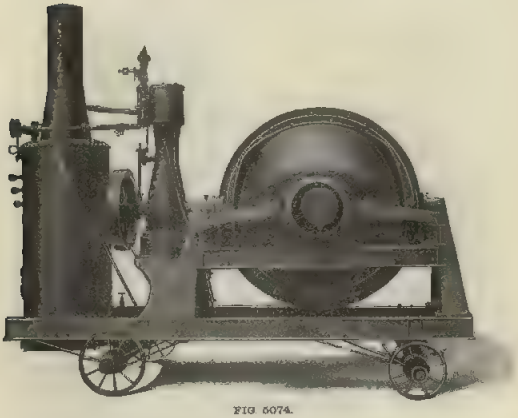


FIG 5074.

MOUNTING

The Drum revolves on roller bearings which are encased around the discharge and filling end or axis of drum. These roller bearings are so encased that they run in oil, and it is impossible for sand or dust to get into the bearings, which is clearly shown by cut.

The engine is mounted on cast-iron base, which in turn is mounted on steel beams, making a substantial job. The trucks have steel wheels.

The Boiler is a submerged tube Boiler, well braced and bolted to the steel beams. The Drum is made of $\frac{3}{16}$ inch boiler steel riveted together, practically water-tight. The frame that carries the drum is made of steel eye beams, well braced and bolted together.

TRANSMISSION

There is only one small pinion and the large gear shown, to transmit the power, the power being transmitted direct from shaft of engine.

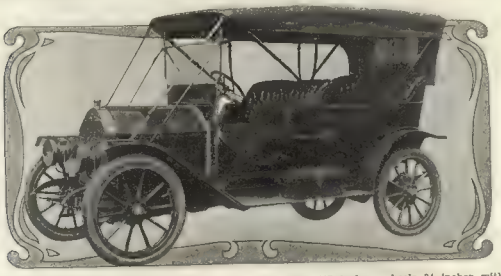
CHARGING AND DISCHARGING OF BATCH

The charging can be done by a power charging device, or by wheelbarrows. When wheelbarrows are used, a platform is built with runways in order to wheel up the material which is dumped into charging hopper. The discharge of the batch is under perfect control, and is operated by the hand lever as shown. A large batch is as easily discharged as a small one. A wheelbarrow can be filled and the drum thrown back in position. Notice how the frame that carries the drum is pivoted and perfectly balanced. The drum revolves 18 revolutions per minute continuously, while charging and discharging.

The Wilcox

The H. E. Wilcox Motor Car Co., of Minneapolis, Minn., is putting on the market a $1500 four cylinder 30-40 car called the Wilcox. This car is designed by Claude E. Cox to meet the demand for a sturdy, luxurious car of refined appearance and elegant finish, without freak features and with the utmost reliability, at a low price. It is made in three models—five passenger touring car, baby tonneau and gentleman's light roadster. One standard chassis being used, the entire attention of the factory is given to it, so that it is of the best possible construction. The wheel base being 115 inches means a luxurious, roomy tonneau and easy riding, and gives the appearance of a much more expensive car.

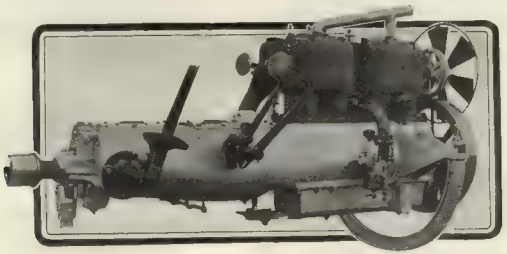
The touring car is a roomy, comfortable town or country car, built for five passengers, and is a car of fine appearance. A special Wilcox Cape Carte Top is furnished for $100, and a special straight or offset windshield for $40. The standard color is royal blue.



The Wilcox Five Passenger Touring Car. Wheel base 115 inches, wheels 34 inches with 34x3½ tires. Notice the large steering wheel and ample leg room for driver.

The baby tonneau is a graceful four passenger car, convenient for all-around use, and gives the maximum amount of comfort under all conditions. Top and wind shield may be had at the same price as for the touring car. The standard color is royal blue with light yellow wheels.

The gentleman's light roadster is a light, easily handled model of the high speed runabout class, provided with a rumble seat,



Carburetor side of the Wilcox motor. Notice the unit construction, the motor and transmission being a single unit, three point suspended. The carburetor is the Special Bennett Automatic.

which may be removed, affording ample room for luggage. It is painted Yale blue, white striped, with white wheels.

The Motor.

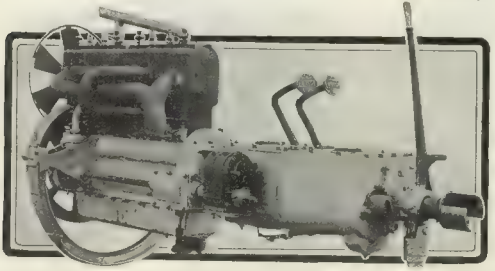
The motor is of the 4 cycle, 4 cylinder type, with a bore of 4¼ inches and a stroke of 5 inches. The valves are on one side. Lubrication is by a constant level splash system, fed by positive pump, with sight feed on the dash. Ignition is by magneto, the dual system being used. The carburetor is the Special Automatic Bennett. Control is by hand throttle and spark on top of the steering wheel. The crank shaft has three bearings, high carbon heat treated and ground to exact size. The engine and transmission are contained in one housing, and three point suspended, the transmission being integral with the crank case. The transmission is of the selective type, with extra heavy sliding gears of chrome nickel steel, and gives three speeds forward and reverse. The clutch is of the multiple disc type, self-contained in the transmission case, enclosed in an oil tight dust proof compartment.

Timken roller bearings are used.

Frame.

The frame is of pressed cold rolled steel. The axles are of Timken pressed steel, oxygen welded rear and I beam drop forged in the front, with the latest type roller bearings. The wheels are of wood, 34 inches, taking 34x3½-inch tires all around. The wheel base is 115 inches. The brakes are internal expanding foot and external contracting hand on the rear wheels, both Thermoid lined. The body is built on a wood frame, with metal panels and seats.

The regular equipment includes two side oil lamps, one rear oil lamp, two gas headlights, generator, horn and outfit of tools.



Intake and exhaust side of the Wilcox Motor. This 4¼x5 motor is three points suspended, and is a unit with the transmission. Notice the location of the magneto—where it is out of danger from short circuiting by rain, dust or mud coming through the radiator.

KELLY-RACINE BUILDING PLANT.

The Kelly-Racine Rubber Co., of Racine Wis., which was recently organized with a capital of $500,000, with Chas. F. O. Kelly as president, F. L. Mitchell, vice president, Stuart Webster, treasurer, and J. H. Dwight, secretary, is building a large plant which, when completed, will afford 200,000 square feet of floor space.

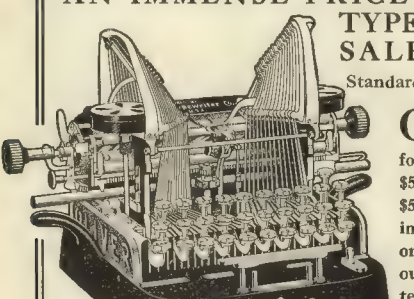
The main building has a frontage of 198 feet with two wings extending back for 251 feet, and is three stories high, with a basement. The one story mill room is 200x60, the press room 90x50. The compound room, vacuum dryer room, machine shop, carpenter shop, and oil house, all one story, have been constructed so that additions may be made when necessary without disturbing the operation of the plant. Electricity generated by the power plant, will be used entirely, and the plant will have a capacity of 1000 auto tires, 3000 bicycle tires, 1500 motorcycle tires per day. Rubber tire accessories of all kinds will also be manufactured. Wm. Seward has been secured as general factory manager.

NORTHWEST A GOOD TERRITORY

Bert S. Bingham, the Pacific Coast manager of the Regal Motor Car Co., of Detroit, has just returned from an extended tour of the Northwest. He placed Regal agencies with the Graham Motor Car Co. in Portland, Ore., which company ordered 500 cars, and the Regal Garage Co. in Spokane, Wash., which ordered 250 cars. Bingham stated that the automobile situation seemed pretty good.

AN IMMENSE PRICE-SAVING TYPEWRITER SALE

Act NOW and Save $50 on this Standard Visible Writer



Original Model No. 3 Olivers for $50 on time—$5 after trial and $5 a month. No interest. Shipped on approval without deposit. Protected by standard guarantee.

These typewriters are flawless—the equal in EVERY respect of ANY typewriter, regardless of price. In no way damaged, shop-worn or inferior.

Visible Writing—Every letter is in plain sight as soon as printed—a necessity now.

Universal Keyboard—All standard typewriters have adopted the universal keyboard—you would waste time learning any other. The Oliver has 84 characters

Quality of the Work—The beautiful work turned out on this splendid typewriter will give your letters distinction the quality of the typewriting has a marked effect upon the success of a letter. The U-shaped typebar and wide, smooth bearings insure perfect alignment, while the one-piece escapement mechanism gives a perfect spacing between the letters. The type are exceedingly hard, they make a clear, clean-cut impression

Carbon-Paper Copies—An excellent manifolder because of the down stroke of the typebar—twenty copies, if you like. Cuts a perfect stencil for mimeograph work.

Ruled Lines—The simple variable-spacing device is instantly adjustable to write on ruled lines—draws horizontal or vertical lines with type and ribbon.

Writes in Colors—The Oliver originated the two-color writing—no change of ribbon necessary to write in any color.

Cards, Bills, Statements, Labels and all Memorandums written with ease and dispatch on this handy machine.

Easy to Operate—So simple any one can learn in a few minutes; elaborate instruction book sent with every machine.

Light Action—The down stroke of the typebar, with its scientific lever principle and wide, smooth bearings, gives the Oliver an action that is the lightest found on any typewriter. It is a pleasure to strike the keys.

Convenient—The ingenious arrangement of the working parts cannot be described adequately on paper, but will be fully appreciated by you when you use the machine.

Will Last a Lifetime—Simplicity is the keynote of the Oliver construction. Less than one-third as many parts as the other machines. Will do a greater variety of work. There is practically no wear-out to this sturdy typewriter.

Portable, Compact, Efficient—The lightest of all standard machines. Most of the weight is in the base, which reduces vibration and places the working parts in a compact, convenient position. It is always ready for business—always efficient. It will do any practical thing that any typewriter will do.

Complete—Metal case and baseboard, tools, instructions, etc., accompany each machine—nothing extra to buy.

Easy to Own—You can have one of these splendid typewriters for your own. Merely a few cents a day—$5.00 after you have tried the machine, and then $5.00 a month for nine months—only $50.00 in all—this is just half of the regular price and there is no interest to pay on the instalments. You use the machine while paying for it. Think of it! the best typewriter that money can buy for only 17 cents a day for a few months.

Order it on Trial—You are welcome to use this splendid machine for five days without paying any deposit, or obligating yourself in any way, no salesman or agent will call upon you, and you will be the sole judge.

All you have to do is to send your shipping instructions on the attached coupon blank. If you are not established in business just name a couple of references. All we want to know is that you are responsible.

A pencil will do to fill out the coupon. Mail it to-day.

Typewriters Distributing Syndicate

840 Masonic Temple, Chicago

Sign, cut out and mail

TRIAL ORDER COUPON

TYPEWRITERS DISTRIBUTING SYNDICATE,
840 Masonic Temple, Chicago, Illinois.

Gentlemen:—Ship me an Oliver Typewriter, Model No. 3, on approval.

If entirely satisfactory, I agree to remit $5.00 within five days from date I receive machine and $5.00 each month thereafter for nine months, until the full purchase price of $50 is paid. Otherwise I will return the typewriter to you at your expense. It is understood that the title will remain in you until the purchase price is paid in full.

Name,

Address,

Via

References:

PLATED WARE

1847 ROGERS BROS. XS TRIPLE

"VINTAGE" DESIGN

"VINTAGE" TEA SPOONS	"VINTAGE" DESSERT SPOONS	"VINTAGE" TABLE SPOONS	"VINTAGE" DESSERT FORKS	"VINTAGE" MEDIUM FORKS
Per dozen... $4.75	Per dozen... $8.50	Per dozen ... $9.50	Per dozen ... $8.50	Per dozen... $9.50

PLATED WARE

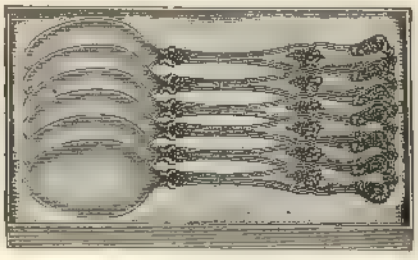
1847 ROGERS BROS. XS TRIPLE

"VINTAGE" DESIGN

Cuts are One-third Size.

NO. 624 "VINTAGE"

No. 624 Six Coffee Spoons..... Per dozen $4.70

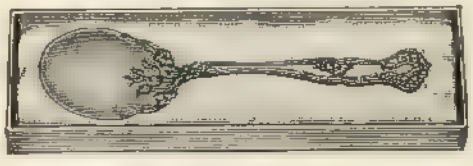


NO. 626 "VINTAGE"

No. 626 Six Tea Spoons..... Per dozen $5 25

NO. 725 "VINTAGE"

No. 725 Baby Spoons..... Each .63



NO. 608 "VINTAGE"

No. 608 Sugar Shells..... Each .88

NO. 615 "VINTAGE"

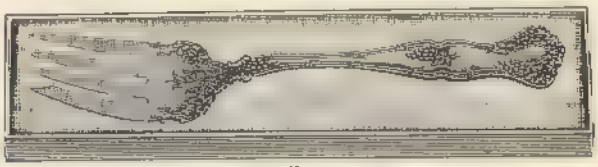
No. 615 Berry Spoons..... Each $2.00
" 615 " " Gilt Bowl..... " 2.75

PLATED WARE

1847 ROGERS BROS. XS TRIPLE

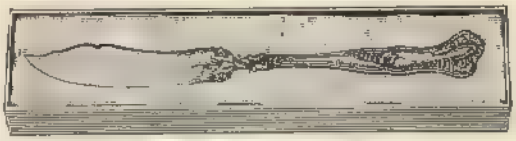
"VINTAGE" DESIGN

Cuts are One-third Size.



NO. 662 "VINTAGE"

No. 662 Cold Meat Forks, Large ..... Each $1.25

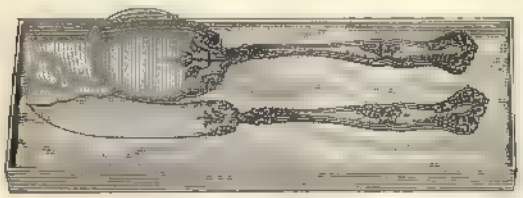


NO. 609 "VINTAGE"

No 609 Butter Knives, Twist Handles ..... Each $1 00

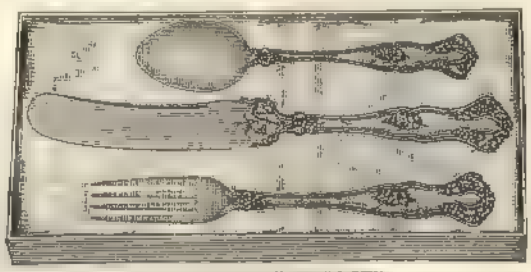
NO. 610 TO 613 "VINTAGE"

No 610	"Vintage"	Cream Ladles	Each	$1.13
" 611	"	Gravy "	"	1.50
" 612	"	Oyster "	"	3.25
" 613	"	Medium "	"	4.00



NO. 604 "VINTAGE"

No. 604 One each, Butter Knife and Sugar Shell ..... Per set $1.83



NO. 116 "VINTAGE"

No. 116 Child's Set, 3 Pieces ..... Per set $2.00

McMANUS TRACK GAGE

FIG 4865

Seasoned hardwood crosspiece 6x1¼ inches at center, oiled finish, with japanned malleable iron flush-set track rests, screwed on, steel carrying handle screwed to top, standard gage, 4 feet 8½ inches between rails.

No. 1—With rubber sheathed level glass inserted in top; malleable iron elevation slide; not insulated; weight per dozen about 120 lbs ..... per dozen, $60.00

No. 2—Without level or elevation slide; insulated; weight per dozen about 120 lbs.; ..... per dozen, 36.00

GAGE WITH ADJUSTABLE LEVEL AND ELEVATION SLIDE

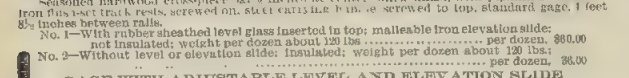


FIG 4886

Select seasoned white ash cross-piece 2¼ x 1⅝ inches, with japanned malleable iron flush-set track rests, screwed on, steel carrying handle screwed to top, standard gage, 4 feet 8½ inches between rails.

No. 1—With graduated anti-rusting brass elevation slide; carefully adjusted track rests; level glass set in a brass tilting frame, adjustable by a thumb screw; weight per dozen about 120 lbs ..... per dozen, $90.00

REGULAR WOOD TRACK LEVEL

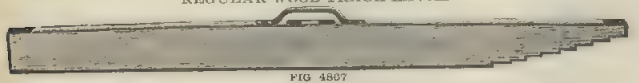


FIG 4867

Seasoned white pine, 5⅛x10⅜ inches with three coats of red paint to prevent warping and twisting, steel bound bottom and ends, one plain the other graduated into eight sizes, steel carrying handle screwed to top, rubber-sheathed level glass inserted in top, length over all 7⅝ inches

No. 1—Not insulated, weight per dozen about 156 lbs ..... per dozen, $30.00

" 2—Insulated; " " " 156 " ..... " " 30.00

COMBINED LEVEL AND SPOT BOARD

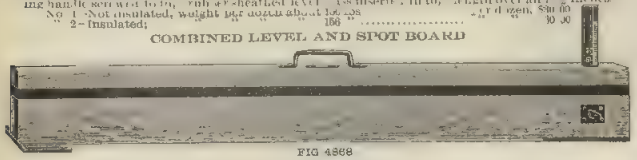


FIG 4868

No. 1.—Seasoned hardwood, 8x1¼ inches, painted white, with black stripe; japanned malleable iron flush-set end plates to rest on track, one plate projecting to prevent tipping, graduated maple elevation slide, regulated by thumb-screw; steel carrying handle screwed to top; rubber sheathed level glass inserted in top, length over all 66 inches; weight per dozen about 192 lbs..... per dozen, $60.00

DISSTON TRACK LEVEL AND GAGE

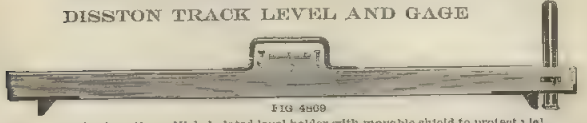


FIG 4869

Vial sensitive in action. Nickel-plated level holder with movable shield to protect vial.

With this level the proper elevation is secured by means of the sliding gage, the vial adjusted to a horizontal position in accordance with the elevation fixed, after which the sliding gage is removed, and the tool then serves for both track and elevation gage without further adjustment.

Sliding gage made of brass, graduated, for elevation up to seven inches.

Stock of poplar wood, thoroughly seasoned. Ends reinforced with metal castings, japanned.

When desired for use as a Track Gage only, the elevation slide and level adjustment can readily be removed.

Price..... each, $13.50

HUNTINGTON TRACK GAGES

Gas pipe cross piece 1⅝ inch in diameter, plain finish, with malleable iron socketed track rests, one arched, with double bearing on track, the other plain, with single bearing on track; Standard gage, 4 feet 8½ inches between rails

No. 1

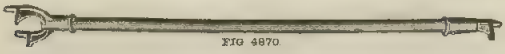


FIG 4870

Huntington Standard, pipe riveted into 3½ inch socket; parts not machined or milled.

No. 1 —Not Insulated, weight per doz. about 150 lbs., price per doz., $20.00
" 1½—Insulated, " " " " 150 " " " " 30.00

No. 2—Track Rests of No. B H. Gage

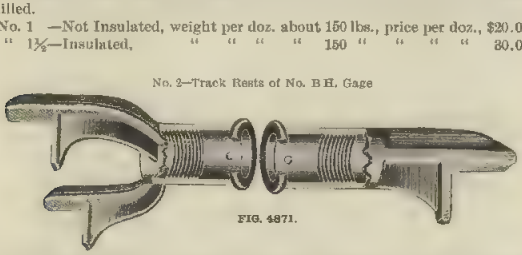


FIG. 4871.

Buda—Pipe threaded and riveted into 3½ in. socket, with machined openings, milled track bearings.

No. 2 —Not Insulated, weight per doz. about 150 lbs., price per doz., $24.00
" 2½—Insulated, " " " " 150 " " " " 34.00

No. 3

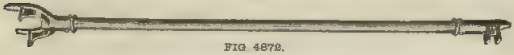


FIG. 4872.

Caffrey-Huntington, with guard rail attachment; same grade as No. 2 but shows distance at which to set guard rail.

No. 3 —Not Insulated, weight per doz. about 150 lbs., price per doz., $30 00
" 3½—Insulated, " " " " 150 " " " " 40.00

INSULATED CIRCULAR GAGES

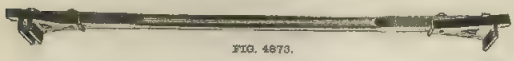
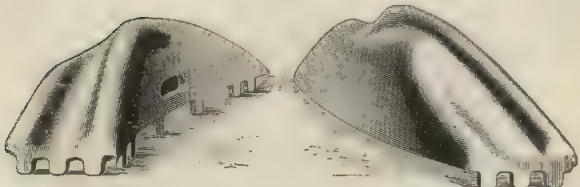


FIG. 4873.

Seasoned hardwood cross-piece 1¼ x 1⅝ inches in diameter, oiled finish with japanned malleable iron radial track rests, bolted on; standard gages 4 feet 8½ inches between rails.

	Price per dozen
No. 1—Without guard rail attachment, weight per doz. 180 lbs..	$36 00
" 2—With " " " " " " 180 "	40.00

ALEXANDER CAR REPLACER



INSIDE REPLACER.
FIG 4862.

OUTSIDE REPLACER.
FIG. 4863

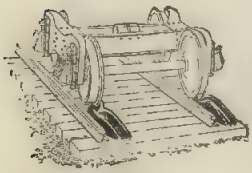


FIG. 4864

Look them over. They are built on right lines to do the business.

If you have used them then you know how handy they are at derailments. If you have not used them ask your practical man what he thinks of them.

We manufacture them from ¾ steel plate and guarantee them to retail your heaviest equipment.

The interest on the investment of equipping your train with this device is 85 cents per year. Can you save this amount in cost at any single derailment?

Figure out your cost at next derailment in loss of service of equipment and time of men delayed. It will surprise you.

Do not think because we do not load up with weight that we cannot do the work. You know the strength of steel plate compared with cast iron and cast steel. Give us a trial. 59,000 pair in service.

This work has to be done at night as well as by day. Give the men a tool they can handle. They all like the Alexander.

THE BEST WRECKING FROG ON THE MARKET

	List Price
No. 1 Replacer—130 lbs. per pair, high enough for six inch rail.....	$17.00
" 2 " —150 " " " " " " five " "	16.00
" 3 " —50 " " " suitable for traction companies, mine engines, steam and electric and rope haulage	12.00
1 Extra—Made of ¾-inch plate, weight 212 lbs. per pair, guaranteed to carry 250 tons.....	.....

A pair sent subject to trial and approval at our expense.

2-Cycle Engines

HUGH DOLNAR

Questions will not be answered in this department unless the inquirer gives his name and address. The name and address will not be published if so requested. Put name and address on all drawings. When possible fold drawings and mail in envelope with the description.

BEST CRANK CASE PRESSURE—VARIABLE COMPRESSION A MISTAKE

[694.] I have been a subscriber for the "Journal" for a great many years, and have a great deal of regard for Mr. Dolnar's expert opinion in reference to two cycle engines, and would be pleased to have an expression of his opinion as to whether a constant compression of eight or ten, or even twelve pounds in the crank case of a two cycle engine, would not make it run just as smooth, fast or slow, load or no load, as a four cycle engine.

ST. LOUIS, MO. F. X. CRAFT.

There is nothing to be gained in the crank-box supply two cycle motor by very high compression, so far as compression alone is concerned. It is an advantage to reduce crank-box clearance, and the less the clearance space, the higher the compression of course. But crank-box compression with the ornimary two cycle motor is negative work, that is to say, is work absolutely thrown away, since the charge is projected into the cylinder while the cylinder is open to the atmosphere through the exhaust port, so that the initial pressure in the cylinder when the compression begins must always be below atmosphere. In the standard forms of large two cycle gas engines with separate charging cylinders the pressure in the charging cylinders can be maintained in the working cylinder because the working cylinder exhaust can be completed before the fresh charge is introduced, though this plan is not often adopted. The advantages of initial cylinder pressure are well known, and having the charge under some pressure before working cylinder compression begins of course increases the maximum power of the motor.

The fault of all crank-box pressure cylinder charge supply two cycle motors is the small charge volume; the piston displacement does not equal the cylinder cubic content between the piston and cylinder head when the piston is at out end of stroke, so that the cylinder can be filled between the cylinder head and the exhaust port only when the exhaust port is placed so high as to reduce the cylinder cubic content between the exhaust and the cylinder head to a volume less than the piston displacement, a reduction of maximum power for a given bore and stroke results. The crank-box pressure supply charge is hence always less in volume that is needful for maximum power, and when throttled the charge volume becomes yet smaller, which reduces the compression and the motor flexibility

Compression should be constant, and with a pure air charge of constant volume the compression will be constant of course, and by the use of a variable quantity of injected fuel the power of the motor can be varied from maximum to the point where the compressed charge is too "lean," or poor in fuel to ignite. Both the four cycle and the two cycle gas engine demand constant compression for maximum flexibility, or power variation, and the ordinary car motor practice of throttling either between the carburetor and the atmosphere, or between the carburetor and the motor results in variable compression, which is a theoretical fault.

I have replied to 694 at some length because many designers believe that very high crank-box pressure is all that is needed to make the best two cycle motor. This is not the case, and I do not think anything can be gained by more than six or seven pounds crank-box pressure.—H. D.

ROTARY CRANK CASE INTAKE VALVE

[695.] I recall reading some time ago in your journal your suggestion, in reply to a subscriber who was about to build a two cycle engine, that he use a rotary valve for crank case supply.

I am building a one cylinder 4 in. bore 4½ in. stroke engine and would appreciate it if you will let me know where a drawing showing the valve suggested by you can be seen.

My engine is for a motor boat and I would like it to be reversible if that is possible with an engine with a rotary valve. If it is not, what kind of valve would you recommend?

JERSEY CITY, N. J. D. H. J.

All there is to the valve mentioned is a hollow sleeve—say 2½ in. out dia. x 3-16 wall thickness, in a casing open to the carburetor suction only, save where a part in the side of the hollow valve opens to the crank box intake port. This acts same as the well known disc valve in the crank box. The cylindrical sleeve valve must of course be driven even turns with the crank shaft. The "Devine" used aluminum sleeve valves in a gray iron, bored seating. I do not see that this valve must of necessity hinder the motor from running in either direction, according as it is started, but I have not looked the matter through with a view to reversing, and will not say for sure about this point.

I do not know where you can get drawings of this valve. Revane Motor Car Co., Cleveland, could give them, if so disposed.—H. D.

MUST BE SELF-IGNITION

[697.] I have a four cylinder two cycle automobile and have had one great trouble with it which up to this time I have not been able to have remedied.

(a) The engine invariably gives three or four explosions when the switch has been thrown off after rather hard pullings up a hill on the high gear.

(b) When the machine is going about 25 miles an hour over a hill, no matter what the load, it seems to have unlimited power, but when it slows down and pulls rather hard at a slower rate of speed, it gives a little knocking sound, which, I feel almost positive, is not caused by advanced spark and I can feel it lose its power, (c) if the switch is thrown off, the engine gives a few impulses and stops.

(d) The engine has just been taken down again and the carbon removed and a pipe has been taken out altogether from each muffler and larger holes have been drilled in the remaining pipes and in the muffler head, but it still acts the same way.

(e) The water in the radiator when it acts this way, to all appearances, is not near boiling.

The engine carbonizes very quickly at the same time it does not seem to smoke.

Up to this time I have always used the oil which the agents advised, but have recently tried another oil, with no better success

PHILA., PA. FRANK HARDART, JR.

I cannot tell you anything of my own knowledge. The agent for your machine in your town is a good man, and should be, and probably is, able to tell you all that any one can tell you in regard to your troubles, but I infer from your story that you have exhausted the agent's resources. I took the trouble to go to the local agent where I am, but could only say that all the troubles you specify are new to him, and there is not a car of your model in this town. The best I can do, therefore, is to offer a few general suggestions.

(a) Self-ignition is often caused by a very insignificant thin, sharp fin or edge of metal in the combustion chamber or on the piston head; a very slight burr or roughness on a screw head or pipe end. This projection may be so small as to escape notice under ordinary examination. The Am. Simplex polishes the deflector and piston head, by hand, at considerable cost, solely to prevent self-ignition caused by the very small projections on the smooth castings; it seems impossible that such a slight roughness should cause self-ignition, but the motors with unfinished piston heads give trouble by self-ignition, which disappears when the piston head and deflector are polished by the use of file, scraper and emery cloth. Possibly smoothing the deflectors and piston heads of your motor might cure it.

(b) All the motors of your make are very strong hill climbers, and I should not expect yours to fade away in the manner you describe at (c) after a little knocking, except in case of a hot and steaming radiator, yet you say (e) that you believe the trouble is not due to overheating. Overheating produces the effects you describe, and so does a too rich charge.

Set the leather-faced, auxiliary air valve of your carburetor standing vertical, so that the balancing spring will just barely close the leather valve-face up against the screw cap which makes the valve seat, and then screw the cover down 30 notches of the adjustment, and try your motor. If the auxiliary valve has too great an upholding spring pressure the mixture will be too rich, which might cause your motor to knock and die as you describe.

(d) Carbon deposits do not generally give trouble with motors of your make, and it is not common practice to pull this motor down to clean it.

Again, your water jackets may be coated inside with a "scale" from the water, which might permit the motor to overheat without boiling the radiator. You cannot reach the inside of the jackets to clean them, but you can find a radiator or boiler cleaning compound that will dissolve most kinds of scale, and put this in your radiator water and see if it helps you out.

Another point; in your carburetor is the gasoline intake strainer, just under the automatic air intake valve. This is liable to clog with dirt, and can make a lot of trouble.

Sorry I cannot help you out with certainty.

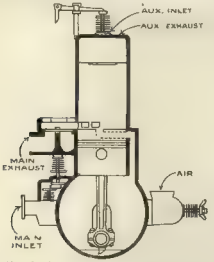
As I am not familiar with the peculiar double muffler you have, I can say nothing about it, save that, broadly, increase of muffler surface is commonly held to increase the probability of satisfactory muffler operation.—H. D.

TWO-CYCLE DESIGN

[1056.] Enclosed please find a rough sketch and details of an idea which recently came into my head. I would be pleased to have your opinion on the subject. The engine is a common valve-in-head "a la" Knox type, but with the two-cycle principle combined with it. Explanation as follows:

When the piston reaches the end of the exhaust stroke and the main exhaust valve has closed, the cam which has opened the valve, immediately opens the main inlet into the crank case. The piston going upward, forcing out the remaining exhaust through the auxiliary valve in the head, draws in a charge of gas into the crank case. When the piston reaches the top and the exhaust valve closed, the inlet valve in the head opens in the usual way; the piston drawing in a charge of gas. While drawing in the charge through the head, the gas in the crank case is compressed, and is let go up

into the cylinder (after the auxiliary inlet has closed) the same as the two-cycle Atlas thus filling the cylinder above atmospheric pressure (?) The piston then travels back on compression stroke, but the main inlet into the crank case doesn't open, therefore



Sectional View of Sargent 2 cycle air scavenging engine.

the automatic air valve opens into the crank case. While the piston is returning on compression stroke, pure air is drawn into the crank case. On the explosion stroke, this air is compressed and after the pressure of the cylinder is let out by the main exhaust, the air is let go up into the cylinder, cooling and cleaning it, while the auxiliary exhaust valve in the head is partly open.

This engine is to be applied to a racing motorcycle or motor car. It is to be either air or water cooled.

NEWBURYPORT, MASS. GOOCH SARGENT.

Your sketch and description are plain, but your practice of writing on both sides and all over little scraps of paper, is very unhandy, and tends to lose part of the communication. Kindly use paper of larger size and write on one side only, as requested by the rules of this department.

Your engine will give good results. It will as you propose introduce clean charges and get more than the usual power out of a given size engine. But it adds a lot of complexity. As shown you have five valves per cylinder. The usual four cycle has but two. These must have operating mechanism and be kept in order. They add noise and cost. Further your contention that the case will once fill with mixture and next with air is not correct. The clearance in the crank case is of necessity large. Even though the space be filled by blocks as fully as possible it is still twice or three times the volume of the piston displacement so that two-thirds of the new charge will remain in the case to mingle with the previous air and remnants of earlier charges. You will therefore scavenge with a pretty fair quality of mixture and add to the working charge a mixture of air and proper charge material. You can adjust the carburetor so that this will work successfully and powerfully, but what is the use? The same cost and fuel expended in a slightly larger cylinder operated on the usual two-cycle plan will give you twice the number of impulses and permit a lighter flywheel and steadier drive. Most folks imagine that the two-cycle engine cannot deliver the same power in proportion to the amount of fuel used that a four-cycle engine does. If the test is made at maximum speeds the two-cycle falls far short, for it does not get full charges and does not work economically at high speeds. But as it slows down it fills more perfectly and at its average speed fills well and delivers large power with good economy. It has no idle strokes so it has less internal friction, has no valves to be lifted and no camshaft friction. It therefore starts easier, runs steadier, and pulls better at low and medium speeds than the engine you propose and I would advise its use rather than the design you are working on.—C. E. D.

KINKS

A smoky oil lamp is usually the result of too little ventilation. A certain amount of oxygen is as necessary for a lamp as for humanity. All lamps are provided with means by which some air is drawn up into the combustion chamber. Accumulation of dirt or solidified oil will stop this necessary air inlet, with the disagreeable results noted.

The platinum points of the tremblers of the coil should not be allowed to become pitted and uneven through neglect. If not properly attended to, the points will become rough and jagged and misfiring will result. The points should be examined occasionally, and if uneven should be trimmed flat with fine jeweler's or manicurist's file.

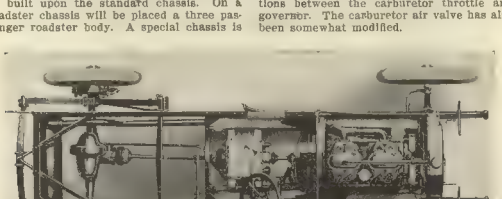
A weak or broken inlet valve spring will show its existence by starting up a good deal of misfiring. The same symptoms will indicate a broken or bent valve stem or carbonized and pitted valve seats. If the valve spring, for instance, has lost its temper, and does not hold the valve properly to its seat, the gas will escape with the resultant misfiring. A new spring should be substituted, but if not to be had at the moment, and the rider wants to get home, the following temporary repair will be found efficacious: Take out the pin which holds the spring in place and insert three or four washers; these will increase the tension and consequently minimize the leak. The same means can be used to make a roadside repair should one of the springs be broken.

The Peerless line for 1911 consists of three distinct models. They are Model 31, four cylinder, 5x5½, thirty horse power; Model 32, six cylinder, 5x5½, fifty horse power; Model 29, four cylinder, 4x4⅝, twenty horse power. Upon these three chasses are built ten distinct styles of bodies. These will include, seven passenger touring car, five passenger close coupled, seven passenger limousine, seven passenger demi-limousine, seven passenger landaulet. These will be built upon the standard chassis. On a roadster chassis will be placed a three passenger roadster body. A special chassis is provided for the following: five passenger phaeton, four passenger pony tonneau, four passenger torpedo, two passenger closed coupe. This latter special chassis is the same as the standard type except for a special roadster dash, steering column and special fenders.

The prices of the 1911 Peerless Cars are as follows:

$4300.00 for the Model 31, with Touring car, Close Coupled, Roadster, Phaeton, or Pony-tonneau bodies, and $6000.00 for the same type of bodies on the Model 32. The Limousine, Landaulet and Demi-Limousine, of Model 31 are $5,400.00, $5,500.00 and $4,800.00 respectively, while the same types of bodies on Model 32 are $7,000.00, $7,100.00 and $6,500.00.

The motor construction is practically the same as used on previous models although a larger bore has been provided and the crank case has been made heavier. The bearings for the front of the crank shaft have been made plain instead of ball bearing as formerly. Several joints have been eliminated by the simplifications of the connections between the carburetor throttle and governor. The carburetor air valve has also been somewhat modified.



Plan of 1911 Peerless Chassis.

Fig. 1. Motor construction same as on previous models, except larger bore, and slight crank case changes; full width brake equalizers are employed. The large semi-platform rear springs, and the method of supporting the rear cross spring are clearly shown. The entire underside of the mechanism is protected by a pan.

The Lubricating System.

A new oil pump is used which feeds only to the crank case compartments. By this method all feeds of the cylinder and fan are eliminated. An individual oil cup is provided for the fan gears. The oil reservoir is cast intergral with the crank case and is equipped with a hand pump for filling crank case compartments. The proper oil level in these compartments may be determined by means of stand pipes extending through the bottom of the crank case to which are attached pet cocks. These drain pipes may be opened simultaneously by operating a small lever located conviently beside the oil reservoir.

Ignition.

The well-known Peerless double ignition system with wire bar is retained. This system consists of Bosch high tension magneto. The same battery, commutator and coil system as used last year are still employed. The coil box is made smaller and one switch controls both battery and magneto. This is provided with lock and key.

The thickness of the radiator has been increased to provide for the increased size of the motor. The herring bone gear pump is unchanged.

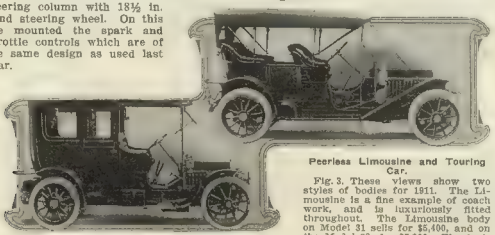
The same construction is used in the steering column with 18½ in. hand steering wheel. On this are mounted the spark and throttle controls which are of the same design as used last year.

Transmission.

The transmission is of the selective type. All mechanism for locking the gears in mesh is housed in the transmission case eliminating exposed parts which would accumulate dirt and present an unsightly appearance. By means of a bayonet lock a hand plate is secured at the top of the transmission case which can be readily removed for the inspection of gears or replenishing lubricant. Telescoping leather dust shields are provided for the propeller shaft universal joints and furnish a casing for gears.

Peerless Motor for 1911.

Fig. 2. No radical changes have been made, although the bore has been increased, and the crank case made somewhat heavier. The forward crank shaft bearing has been changed from a ball bearing to a plain bearing, and the carburetor and throttle connections have been simplified. The ignition wires are so mounted that they can instantly be removed.



Peerless Limousine and Touring Car.

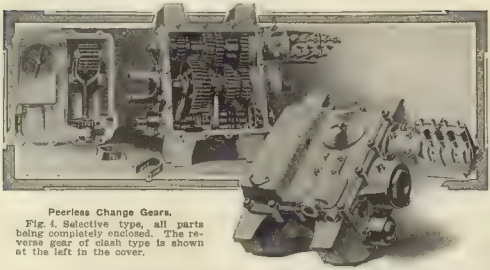
Fig. 3. These views show two styles of bodies for 1911. The Limousine is a fine example of coach work, and is luxuriously fitted throughout. The Limousine body on Model 31 sells for $5,400, and on the Model 32, for $7,000. The ignition is dual, clutch internal expanding, leather faced band, and the springs are of Silico Manganese steel.

The Clutch.

The clutch is of the internal expanding leather face band type as used formerly. The foot levers are of the radial type thrusting forward through a small opening in the floor board instead of operating through a long slot. Connections from foot lever consist of a rod with ball and socket joints, these joints are not only perfectly universal in action but large enough to reduce wear to a minimum.

Braking System.

Two internal expanding emergency brakes, operated by hand lever and two contracting brakes controlled by foot lever are provided. The emergency brake does not disengage the clutch. A new device for holding the band brakes clear of the drums has been provided in place of the springs formerly



Peerless Change Gears.

Fig. 4. Selective type, all parts being completely enclosed. The reverse gear of clash type is shown at the left in the cover.

used. Both the emergency brake and speed change levers are so placed as to be easily accessible to the driver. The brake rod has been made in one piece and carried above the speed shaft. By this method unnecessary parts have been eliminated from the operating mechanism.

A slight change has been made in the torque rod by mounting in a different manner the springs for absorbing the shocks transmitted through the rod. There are no brazed joints.

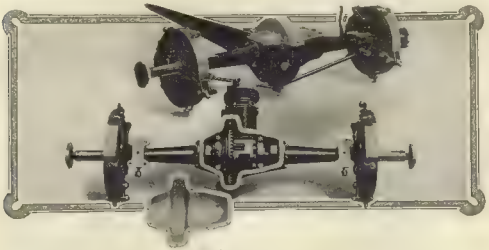
Rear Axle.

The weight of the rear of the car, with its portion of the load is carried by the rear axle which consists of three members only: the cast-steel differential case being bolted on either end to flanges of the one-piece, heavy steel axle tubes which carry at their outer extremities the road wheels. The power is transmitted by bevel gears, differential and live axle shafts operating clutch plates engaging with the wheel hubs. These Cardan or universal joints allow for the arched axle construction and consequent camber and dishing of the rear wheels which gives to Peerless cars a distinctive appearance. "I" beam construction is used in the front axle construction, imported forgings being used.

Peerless frames are made of cold rolled pressed steel of truss pattern with a subframe upon which the engine and transmission are carried.

Springs.

All springs are of Silico maganese steel, manufactured by Lemoine, of Paris and are claimed to be the best obtainable. These springs are long and flat insuring the maximum of comfort while riding.



Peerless Rear Axle.

Fig. 5. View showing the complete rear axle assembly, attention is called to the complete accessibility of the spur gear differential and driving bevel by removing the upper portion of the housing, also to the telescoping leather dust shields covering the universal joint, and acting as a grease casing. The axle is of floating type.

The Warren Motor Car Company, of Detroit, Michigan, after a very successful season announce a line of 1911 models, all of which are based on a standard Warren-Detroit "30" chassis. These models are known as 11A, a roadster with rumble seat. Model 11D, a roadster with thirty gallon gasoline tank at the rear, as shown in figure 1. These models selling for $1200.00, and Model 11B with demi-tonneau, $1300 00, and Model 11C touring car at $1325.00 At $1500 00 are offered Model 11F torpedo, and the Model 11G, fore-door touring car. An inside driven coupe is offered at $1750.00, and is known as Model 11E.

The prices include two complete and distinct sets of ignition, using Bosch high tension magneto; gas lamps and generator three oil lamps, horn and complete tool equipment. A special mohair top, dust cover and high grade glass wind shield, are given in addition for $100.00. The top and glass front equipment for the roadster, although of the same quality, sells for $90.00.

The wheel base of all these models is 110 inches, with 34 inch wheels, and the tires vary from 34x3½ to a heavy type 35x 4 inch tire.

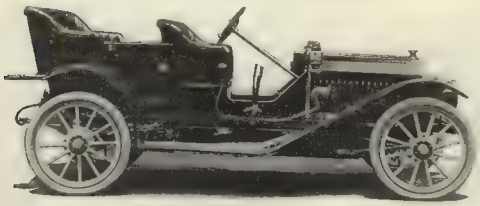
The En Bloc Motor

The Warren-Detroit engine is of the typical en bloc type with integral water jackets and valves all arranged on the same side The engine has a rating of 25.6 h. p., with cylinders of 4 inches bore and 4½ inches stroke.

A feature of interest is the fact that the four throw crank is supported in but two main bearings of the plain type. The upper halves of the bushings are each secured in place by four studs with castellated nuts In order that the crank shaft supported at only its two ends may withstand flexing and

Warren-Detroit "30."

Fig 1. Attention is called to the large gasoline tank at the rear of the seat, and to the carrying space back of it, also to the graceful design of the racy type guards, and the stiff inclination of the foot boards The equipment includes a Bosch magneto, and full set of electric lamps. Price $1,200.



Warren-Detroit Touring Car.

Fig 2 Four cylinder motor, 4x4½; 25.6 H. P., 1 throw crank shaft supported in two main bearings of plain type. Price completely equipped, except top, $1,325; enclosed coupe body, car shown in the head piece, $1,750.

abuse of its two supported bearings, both the crank pins and crank arms are made with exceptionally heavy cross sections. The shaft itself is forged from a very high grade steel of extreme tensile strength.

Crank Case and Oiling

The aluminum crank case is provided with four integral supporting arms, and is split horizontally in the plane of the crank shaft. The lower half of the crank case serves simply as an oil well and protecting covering. The only mechanism carried by it is the oil pump which is of the plunger type and is provided with a flat mushroom head against which one of the exhaust cams operates. The exhaust cam forces the plunger down and causes it to discharge the oil drawn into the pump after the plunger is raised by its returning spring. The oil elevated by the pump is conducted through a lead and supplies the main bearings of the engine and eventually drains down and maintains the proper level in the crank pits for splash lubrication of the connecting rod ends, the cylinder walls, the cams, etc. When the oil in the pits reaches a certain predetermined level it overflows and passes through a strainer to the oil reservoir in the bottom of the case from which it is pumped as needed.

Water Cooling

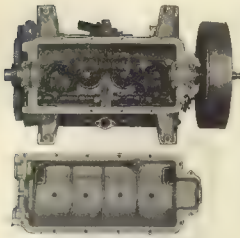
Cooling water is circulated through the engine jacket by a centrifugal pump with short connections, and draft through the radiator is assisted by six bladed fan with an eccentric adjustment provided for maintaining the tension of its driving belt.

The ignition system is of the dual type with magneto for regular service running and dry cells for starting. The spark timing is hand controlled.

The steering wheel is large, being 18 inches in diameter, with aluminum spider and mahogany rim. The steering column sleeve is 1¾ inches in diameter, of brass, and has considerable rake. The dash is of cherry.

Right and Left Sides Warren-Detroit Motor.

Fig 3. This compact motor is of en bloc type, cylinders 4x4½. Note the clean cut inlet and exhaust pipes, low position of the carburetor, thorough housing of the gears, and the substantial support of the fan.



Under Side Warren-Detroit Crank Case.

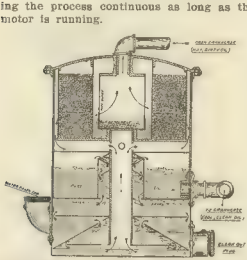
Fig. 4. This shows the under half of the crank case, which is an oil pan. Attention is called to the ribs and to the liberal sized bearings of the connecting rod ends, and to the wide faced half-time gears.

The front section of the floor board is pyramid aluminum cover, while the "scuff boards" are brass covered. Pyramid rubber matting is used on the floors, and the passengers and body are protected by large guards extending between the fenders proper and the body.

THE "H. F. M." OIL FILTERING AND LUBRICATING SYSTEM

This system has been designed by H. F. Maranville, and is manufactured under his supervision by the Al-Ton Motor Accessory Co., of Akron, Ohio.

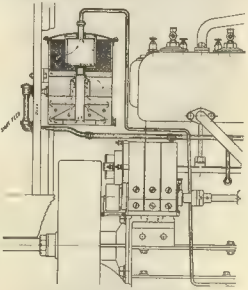
It is designed to supply the crank case with cool, heavy oil, remove it when it has become dirty, hot and thin, filter it, cool it and supply it to the crank case again, making the process continuous as long as the motor is running.



Round Type Filter of the "H. F. M." automatic oil filtering and lubricating system.

The dirty oil from the crank case is pumped to the filter, located on the dash and passes first through a cylindrical strainer fitted with a removable sediment pan, then through a cylinder filled with bone black, then through a ply of specially woven filtering cloth, after which it flows to the bottom of the filter, rising again through the water compartment, being washed and cooled. It then goes through the water separator into the pure oil reservoir, from which it flows by gravity to the crank case, supply pipes leading in at the top opposite each connecting rod.

Thus the apparatus is automatic, and requires no attention save to supply the necessary oil and water. Several of these systems have been carefully tested by several



Showing filter on the dash, with pipe carrying dirty oil from crank case to filter, and pipe carrying clean oil from filter to crank case feed pipes opposite connecting rods.

years' use and have proven their practicability and merits. The cool, heavy oil which the system supplies does not leak through bearings as does hot thin oil; it lubricates better, increases compression, and, being clean and free from dirt or grit, will not injure bearings or cylinder walls.

The Clark Carriage Co., Amesbury, Mass. is making a specialty of automobile bodies largely metal. They are made in limousine landaulet and touring car styles.

The Acme Veneer & Body Co., Rahway, N. J., makes landaulet, limousine, runabout, touring and gunboat bodies of aluminum and wood, and also seats of every description.

The Diamond Auto Top Construction Co., 220 West 48th street, New York, manufactures general automobile upholstering, including tops, slip covers and side curtains.

ICE CREAM FREEZERS

"BLIZZARD"

DASHER
Used in Blizzard and Gem Freezers.

"GEM"

"Blizzard," Single Action, Can revolves while the Dasher is held in the Cross Bar or Top Plate. The Cross Bar is not hinged, but similar to that of the Gem Freezer, and has the same fastening. The Dasher is same as that in the Gem Freezer, and has Automatic Twin Scrapers. White Cedar Pails with Electric Welded Wire Hoops. All Inside Parts Tinned, Outside Parts Galvanized.

"Gem," Double Action. Can and Dasher revolve in opposite directions. Cross Bar is not hinged, but is more readily removed and replaced. Automatic Twin Scrapers. White Cedar Pails, with Electric Welded Wire Hoops. All Inside Parts Tinned, Outside Parts Galvanized.

"LIGHTNING"

DASHER
Used in Lightning Freezers.

"LIGHTNING"

Wheel Dasher. Quadruple Motion. Automatic Twin Scrapers. Top Plate Swings up as if hinged to Pail, but is Detachable. White Cedar Pails with Electric Welded Wire Hoops. All Inside Parts Tinned, Outside Parts Galvanized.

FLY WHEELS ONLY

For "Blizzard," "Gem" and "Lightning" Freezers.

For Freezers.		Diameter, inches.	Shaft, inches.	Weight, pounds.	Each.
2-3-4	All Styles	12	7/16	6	$1.20
6	" "	13	1/2	8 3/4	1.60
8	" "	14	5/8	10 3/4	2.10
10-12	" "	15	9/16	15	3.00
14	Gem & Blizzard	18	9/16	21 3/4	4.10
14	Lightning	18	5/8	21 3/4	4.10

Size, Quarts		1	2	3	4	6	8	10	12	14
"Blizzard"	Each	$2.20	2.60	3.00	3.60	4.80	5.90	7.60	9.00	10.40
"Gem"	"	2.40	2.80	3.30	4.00	5.10	6.50	8.40	10.00	11.50
"Lightning"	"	2.40	2.80	3.30	4.00	5.10	6.50	8.40	10.00	11.50

ICE CREAM FREEZERS

"ARCTIC"
"WHITE MOUNTAIN"

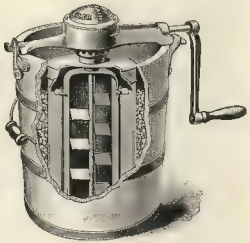
Triple Motion, Can revolves in one direction, Outside Dasher moves in opposite direction, Inside Dasher moves in opposite direction to Outside Dasher, Double Self-Adjusting Wood Scrapers, Second Growth White Pine Pail, Flat Galvanized Iron Hoops, Can, Best Tin Plate.

Size, quarts	1	2	3	4	6	8
Each	$2.50	3.20	3.80	4.40	5.60	7.20
Fly Wheels only		1.20	1.20	1.20	1.80	2.00
Size, quarts	10	12	15	20	25	
Each	$9.30	11.70	14.00	18.00	23.20	
Fly Wheels only	2.80	4.40	4.40	5.20	6.40	

"ARCTIC"

Single Motion, Can revolves while Dasher remains Stationary. Double Self-Adjusting Wood Scrapers, White Pine Pail, Flat Galvanized Iron Hoops, Can, Tin Plate.

Size, quarts	1	2	3	4	6	8	10	12	15
Each	$2.20	2.60	3.00	3.60	4.60	5.90	7.60	9.00	10.40



"WHITE MOUNTAIN"

"FREZO"

"FREZO"

One Motion, Full Size Tubs and Cans, Best Quality Lumber, Best Coated Tin Plate, Improved Dasher with Double Scrapers. Same style as Dana Freezer.

Size, quarts	1	2	3	4	6	8	10	12
Each	$2.20	2.60	3.00	3.60	4.60	5.90	7.60	9.00

ICE CREAM FREEZERS

"AMERICAN TWIN"

Freezes Two Flavors of Ice Cream or an Ice or Sherbet and Ice Cream at One and the Same Time, in One Freezer.

The Can is divided in Two Parts by a Vertical Partition. One flavor is placed in one, the other in opposite side of Can, in each of which the Scrapers, etc., operate. The Can cannot be turned as in old style Freezers, because of the Partition. It is therefore swung to and fro by a rocking motion of the Crank. This is a more comfortable and much easier movement, and very much less tiresome than turning a Crank.

Cedar Pails with Electric Welded Wire Hoops, all Inside Parts Tinned, Outside Parts Galvanized.

Size, quarts	2	3	4	6	8
Each	$3.50	4.10	5.00	6.40	8.00
Size, quarts	**10**	**12**	**15**	**20**	
Each	$10.00	12.00	16.00	20.00	

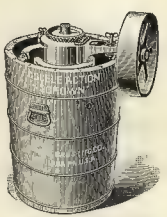
FREEZERS FOR RESTAURANTS, HOTELS, BOARDING HOUSES, CONFECTIONERS, ETC.

WITH CRANK

"Crown"	8 qt.	$10.00
"	10 "	12.00
"	14 "	14.00
"	18 "	19.00
"	24 "	23.00
"Jumbo Lightning"	20 "	19.00

WITH FLY-WHEEL

"Crown"	8 qt.	$14.00
"	10 "	16.00
"	14 "	18.00
"	18 "	24.00
"	24 "	29.00
"	32 "	34.00
"Jumbo Lightning"	14 "	17.00
" "	20 "	24.00



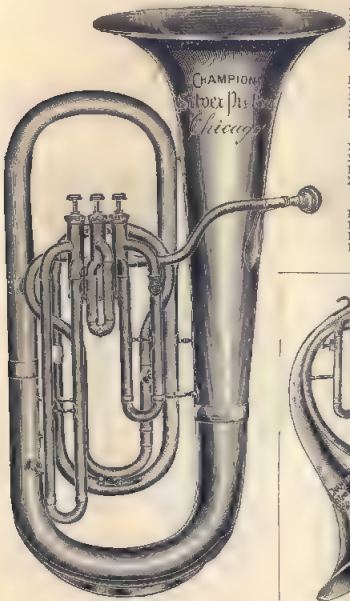
WITH PULLEY

"Crown"	14 qt.	$23.00
"	18 "	28.00
"	24 "	35.00
"	32 "	40.00
"Jumbo Lightning"	14 "	22.00
" "	20 "	28.00

The Crown Freezer is the same in construction as the Gem, the Jumbo Lightning as the Lightning, but made heavier and stronger.

BAND INSTRUMENTS

Light Action, Silver Piston—with Water Keys, Music Racks and German Silver Mouthpieces



Nos. 9412-9413½

Eb BASS

No. 9412	Brass	Each	$ 76.00
No. 9412	Brass, nickel plated	Each	87.00
No. 9412½	Brass, silver plated, satin finish	Each	126.00
No. 9413½	Brass, silver plated, burnished	Each	146.00

Eb HELICON BASS

No. 9416	Brass	Each	$111.00
No. 9417	Brass, nickel plated	Each	125.00
No. 9416½	Brass, silver plated, satin finish	Each	141.00
No. 9417½	Brass, silver plated, burnished	Each	192.00

BBb BASS—LARGE SIZE.

No. 9428	Brass	Each	$142.50
No. 9429	Brass, nickel plated	Each	162.50
No. 9428½	Brass, silver plated, satin finish	Each	212.50
No. 9429½	Brass, silver plated, finely burnished	Each	232.50

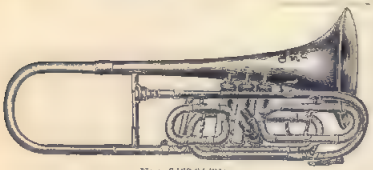
Eb CONTRA BASS.

No. 9414	Brass	Each	$ 84.00
No. 9415	Brass, nickel plated	Each	95.00
No. 9414½	Brass, silver plated, satin finish	Each	142.50
No. 9415½	Brass, silver plated, burnished	Each	162.50

Mello-tone Nos. 9436-9437½

CONCERT HORN OR MELLOPHONE IN F, WITH CROOKS TO Eb, D, AND C.

No. 9436	Brass	Each	$55.00
No. 9437	Brass, nickel plated	Each	63.00
No. 9436½	Brass, silver plated, satin finish	Each	81.75
No. 9437½	Brass, silver plated, finely burnished	Each	98.00



Nos. 9422-9423½

Eb ALTO TROMBONE.

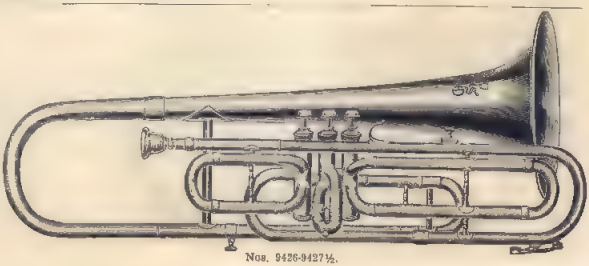
No. 9422	Brass	Each	$36.00
No. 9423	Brass, nickel plated	Each	40.50
No. 9422½	Brass, silver plated, satin finish	Each	56.00
No. 9423½	Brass, silver plated, burnished	Each	73.00

Bb TENOR TROMBONE.

No. 9420	Brass	Each	$42.50
No. 9421	Brass, nickel plated	Each	48.00
No. 9420½	Brass, silver plated, satin finish	Each	66.00
No. 9421½	Brass, silver plated, burnished	Each	83.00

Bb BARITONE TROMBONE.

No. 9426	Brass	Each	$46.50
No. 9427	Brass, nickel plated	Each	55.00
No. 9426½	Brass, silver plated, satin finish	Each	76.00
No. 9427½	Brass, silver plated, burnished	Each	92.50



Nos. 9426-9427½.

BAND INSTRUMENTS

WITH WATER KEYS, MUSIC RACKS AND GERMAN SILVER MOUTHPIECES.

B♭ CORNET.

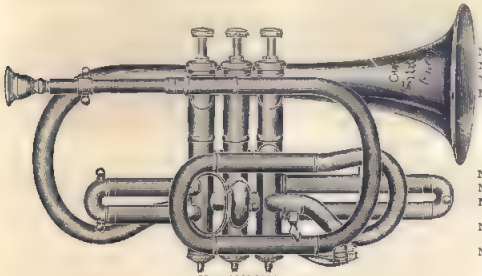
With Water Key.

No. 9202	Brass, with B♭ and A Set Pieces	Each $21.85
No. 9203	Brass, with B♭ and A Set-Pieces, Nickel Plated	Each 24.50
No. 9202½	Brass, with B♭ and A Set-Pieces, Silver Plated, Satin Finish	Each 35.25
No. 9203½	Brass, with B♭ and A Set Pieces, Silver Plated, Burnished	Each 42.00

B♭ CORNET.

With Double Water Key.

No. 9260	Brass	Each $26.00
No. 9261	Brass, Nickel Plated	Each 28.50
No. 9260½	Brass, Silver Plated, Satin Finish	Each 41.00
No. 9261½	Brass, Silver Plated, Burnished	Each 46.00



Nos. 9260-9264.

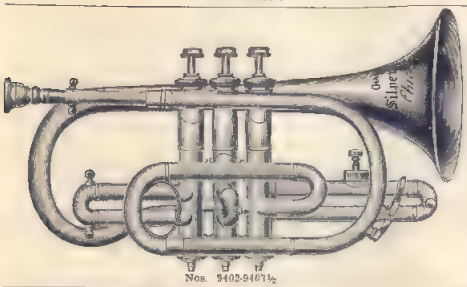
B♭ CORNET.

No. 9302	Brass	Each $23 00
No. 9303	Brass, nickel plated	Each 25.75
No. 9302½	Brass, silver plated satin finish	Each 36 50
No. 9303½	Brass, silver plated, burnished	Each 43.00

B♭ CORNET COURTOIS MODEL.

Double Water Key.

No. 9360	Brass	Each $28 00
No. 9361	Brass, nickel plated	Each 30.75
No. 9362	Brass, silver plated, satin finish, with gold-plated bell	Each 45 50
No. 9363	Brass, silver plated, finely burnished. Each	48 00
No. 9364	Brass, silver plated, finely burnished, with gold-plated bell	Each 53 00



Nos. 9402-9403½.

B♭ CORNET.

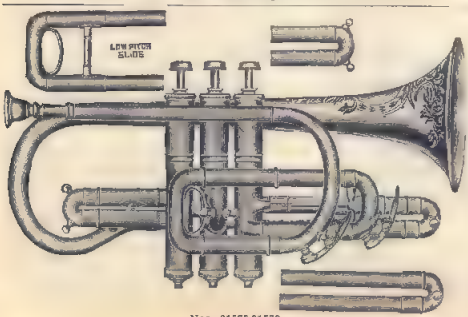
No. 9402	Brass	Each $24 00
No. 9403	Brass, nickel plated	Each 26 50
No. 9402½	Brass, silver plated, satin finish	Each 38 00
No. 9403½	Brass, silver plated, burnished	Each 44.00

E♭ CORNET.

No. 9400	Brass	Each $23 50
No. 9401	Brass, nickel plated	Each 26.00
No. 9400½	Brass, silver plated, satin finish. Each	37 25
No. 9401½	Brass, silver plated, burnished	Each 43.50

C CORNET.

No. 9450	Brass, with B♭ crook	Each $24.50
No. 9451	Brass, with B♭ crook, nickel plated. Each.	27 25
No. 9450½	Brass, with B♭ crook, silver plated, satin finish	Each 29 00
No. 9451½	Brass, with B♭ crook, silver plated, burnished	Each 44.50



Nos. 91575-91579.

B♭ CORNET. AMERICAN MODEL.

Two Water Keys. Pearl Finger Buttons.

No. 91575	Brass	Each $57 25
No. 91576	Brass, nickel plated	Each 60.00
No. 91577	Brass, silver plated, satin finish Each	70 50
No. 91578	Brass, silver plated, burnished Each	77.25
No. 91579	Brass, silver plated, burnished gold bell and tips	Each 84.00

B♭ CORNET. AMERICAN MODEL.

Double Water Key. Pearl Finger Buttons.

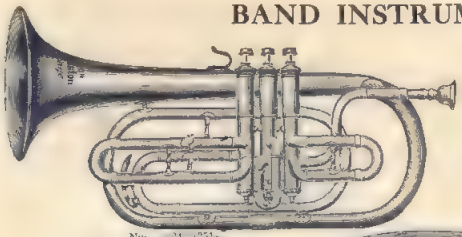
No. 91560	Brass	Each $60 50
No. 91561	Brass, nickel plated	Each 63 25
No. 91562	Brass, silver plated, satin finish. Each	74.00
No. 91563	Brass, silver plated, burnished Each	80.50
No. 91564	Brass, silver plated, burnished, gold, bell and tips	Each 94.00

B♭ CORNET. BESSON MODEL.

Pearl Finger Buttons.

No. 91502	Brass	Each $56 50
No. 91503	Brass, nickel plated	Each 53.25
No. 91502½	Brass, silver plated, satin finish. Each	66 50
No. 91503½	Brass, silver plated, burnished	Each 70 50

BAND INSTRUMENTS



Nos. 24 [illegible]

With Water Keys, Music Rack and German Silver Mouthpiece.

SOLO Eb ALTO.

No. 9424	Brass	Each	$36 00
No. 9425	Brass, nickel-plated	Each	40 00
No. 9424½	Brass silver-plated, satin finish	Each	56.00
No. 9425½	Brass, silver-plated, burnished	Each	71.50

Nos. 9404-9405½

Eb ALTO.

No. 9404	Brass	Each	$36 00
No. 9405	Brass, nickel-plated	Each	40.00
No. 9404½	Brass, silver-plated, satin finish	Each	56.00
No. 9405½	Brass, silver-plated, burnished	Each	71.50

Eb ALTO.
Improved Model.

9204	Brass	Each	$[illegible]
9205	Brass, nickel-plated	Each	[illegible]
9204½	Brass, silver-plated, satin finish	Each	52.50
9205½	Brass, silver-plated, burnished	Each	68.00

Nos. 9406-9407½.

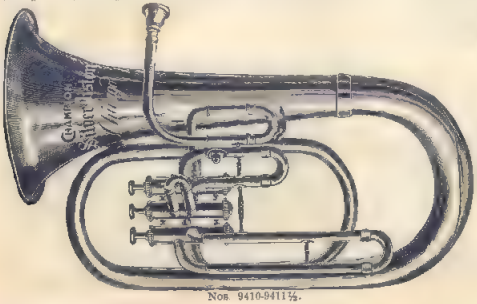
Bb TENOR.

No. 9406	Brass	Each	$41.25
No. 9407	Brass, nickel-plated	Each	47.00
No. 9406½	Brass, silver-plated, satin finish	Each	65 00
No. 9407½	Brass, silver-plated, burnished	Each	81.50

Nos. 9408-9409½

Bb BARITONE.

No. 9408	Brass	Each	$46 50
No. 9409	Brass, nickel-plated	Each	55 00
No. 9408½	Brass, silver-plated, satin finish	Each	76.00
No. 9409½	Brass, silver-plated, burnished	Each	95 50



Nos. 9410-9411½.

Bb BASS.

No. 9410	Brass	Each	$54 25
No. 9411	Brass, nickel-plated	Each	61.50
No. 9410½	Brass, silver-plated, satin finish	Each	87.50
No. 9411½	Brass, silver-plated, burnished	Each	111.00

THE "WHITNEY" ROLLER-BEARING MINING TRUCKS

THE "GREASE" USERS'

PRICE LIST NO. 27

LIST PRICES OF "WHITNEY" ROLLER-BEARING TRUCKS. STYLE R

Round Axle Truck with Axle Straps. Each Truck, as listed below, consists of 4 "Whitney" Roller-Bearing Wheels with center solid plug bolts, 2 round axles, 4 felt packed boxings, and 2 steel axle straps.

Size of Axle, Inches	Diameter of Wheel, Inches	Price, Per Truck, Style R								Approximate Weight of Each Wheel, lbs.	Approximate Weight of Truck, lbs.	Extra Wt. Per Truck for Each Extra Inch of Gage, lbs.	With of Tread of Standard Wheels, In.	Extra Cost Per Truck for Each 1/4 In. Wider Tread
		18 In. Gage	24 In. Gage	30 In. Gage	36 In. Gage	40 In. Gage	42 In. Gage	44 In. Gage	48 In. Gage	56¾ In. Gage				
1¼	8	$29 62	$29 92	$30 22	$30 52	$30 72	$30 82	$30 92	$31 12	$31 52	40	295	1.00	3	$0.30
1⅜	8	32 10	32 82	33 24	33 66	33 94	34 08	34 22	34 50	35 06	42	310	1.37	3	.30
1⅜	10	30 58	30 88	31 18	31 48	31 68	31 78	31 88	32 08	32 48	46	315	1.00	3	.30
1¼	10	33 20	33 32	34 04	34 46	34 74	34 88	35 02	35 30	35 86	48	330	1.37	3	.30
2	10	36 94	37 48	38 02	38 56	38 92	39 10	39 28	39 64	40 36	62	425	1.78	3	.40
1¼	12	32 98	33 28	33 58	33 88	34 08	34 18	34 28	34 48	34 88	60	375	1.00	3	.48
1⅜	12	35 92	36 24	36 76	37 28	37 60	37 76	37 92	38 24	38 88	64	450	1.37	3	.48
2	12	39 82	40 36	40 90	41 44	41 80	41 98	42 16	42 52	43 24	68	500	1.78	3	.48
2¼	12	41 40	45 06	45 72	46.38	46.82	47 04	47.28	47.70	48 58	76	575	2 25	3½	.54
2½	12	50 80	51 64	52 48	53 32	53 88	54 16	54 44	55 00	56.12	90	700	2.78	3½	.56
1½	14	31 12	34.72	35.02	35.32	35 52	35.62	35 72	35 92	36.32	68	450	1 00	3	.54
1¾	14	37 01	37.48	37 88	38.30	38.58	38 72	38.86	39 14	39.70	70	450	1.37	3	.54
2	14	41 42	42 98	42 50	43.04	43 40	43.58	43.76	44 12	44.84	75	525	1.78	3½	.64
2¼	14	45 81	46 50	47 16	47 82	48 26	48 48	48.70	49 14	50 02	84	620	2 25	3½	.94
2½	14	52 56	53 40	54 24	55.08	55 64	55.92	56.20	56 76	57.88	100	750	2.78	3½	.94
3	14	66 28	67.48	68.68	69 86	70.68	71 08	71.48	72 28	73.88	122	900	4.00	3½	1 20
2	16	44 62	45.16	45.70	46.24	46.60	46.78	46 96	47 32	48.04	94	600	1.78	3½	.68
2¼	16	49 38	50 02	50 68	51 34	51 78	52 00	52 22	52 66	53.54	104	690	2 25	3½	.88
2½	16	56 00	56.84	57.68	58 52	59 08	59 36	59.64	60 20	61.33	120	800	2.78	3½	1 10
2¾	16	61 66	62.68	63 70	64.72	65 40	65 74	66 08	66.76	68.12	130	900	3.38	3½	1.16
3	16	69 48	70 68	71.88	73 08	73 88	74.28	74 68	75 48	77.08	140	1000	4 00	3½	1.20
2	18	47 02	47 56	48.10	48 64	49 00	49 18	49.36	49 72	50.44	108	760	1 78	3½	.70
2¼	18	51 92	52 58	53 24	53 90	54 34	54 56	54 78	55 22	56 10	120	890	2 25	3½	.88
2½	18	58 00	58 84	59 68	60.52	61 08	61 36	61 64	62 20	63 32	132	850	2.78	3½	1.26
2¾	18	63 74	64 76	65 78	66 80	67 48	67 82	68 16	68 84	70 20	142	960	3 38	3½	1 40
3	18	70 92	72 12	73 32	74 52	75 32	75 72	76 12	76 92	78 52	148	1060	4 00	3½	1 50
2½	20	61 68	62 72	63 76	64 80	65 52	65 88	66 24	66 96	67 80	148	925	2 78	3½	1 40
3	20	74 60	75 80	77 00	78 20	79 00	79 40	79 80	80 60	82 20	164	1100	4 00	3½	1 60

TO ORDER, GIVE

(1) Style of Truck.
(2) Size of axle.
(3) Diameter of Wheel.
(4) Wheel base or distance axles are spaced apart on centers.
(5) Track gages (the exact distance between heads of rails inside).

WHITNEY CENTER-OILING AIR VALVE WHEEL

Sectional View Center Oiling Wheel and Valve

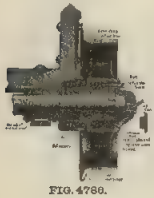


FIG. 4786.

Front View. Holes Empty

FIG. 4787.

Air Valve Spring Cage, Malleable Iron

FIG. 4788.

WHITNEY OLD STYLE WHEEL

FIG 4780.

Cut shows cross section of hub, side-oiling pattern. Can be furnished when specified. We recommend the center-oiling wheel, as shown above, which is furnished to regular order.

For complete prices on Whitney Trucks see Price Lists 20A and 20B on the following pages.

Square Axle Trucks also quoted on application.

WHITNEY ROLLER-BEARING TRUCKS

LAST PATENTS, 1908

The wheel is a solid casting without loose parts. The front hub is solid. The back hub extends into a felt-packed pedestal. The bearing is grit proof. The rollers are large diameter. The journal is long and centrally located under the gauge line. The wheel hub is lined with a split bushing of spring steel, which can be quickly renewed. The wheel hub itself is indestructible.

The rollers are guaranteed for wear. The wheel uses grease. They require greasing every 4 to 6 months. The cars run 50 per cent. easier than the solid hub car. The number of mules and drivers at a mine can be greatly reduced by using these roller-bearing wheels. The cars are handled quicker and thus the output is increased. The economy and service of this wheel appeals to everyone. The extra cost is paid back in a few weeks.

Cross Section of Hub, Whitney Roller-bearing Wheel

FIG. 4782.

Section through line A-B, showing Cage, Rollers, Steel Lining and Locking Bolts

(Section through A-B)

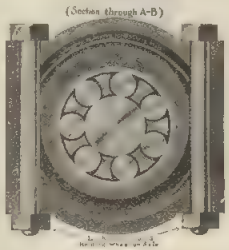


FIG. 4783.

View showing Details of Construction Parts

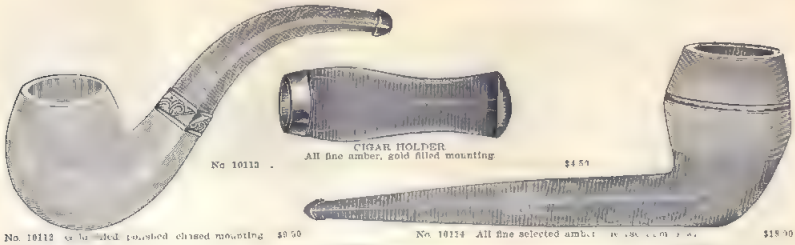
FIG. 4784.

Complete Roller-Bearing Truck, Style R, ready for the Car Bottom

FIG. 4785.

FINEST QUALITY GENUINE MEERSCHAUM PIPES, CIGAR AND CIGARETTE HOLDERS PRICES EACH.

Fine Selected Genuine Amber Stems. Put up in Fine Plush Lined Leather and Chamois Cases. Illustrations are Exact Size.



No. 10113 CIGAR HOLDER
All fine amber, gold filled mounting $4.50

No. 10112 [illegible] polished chased mounting $8.50

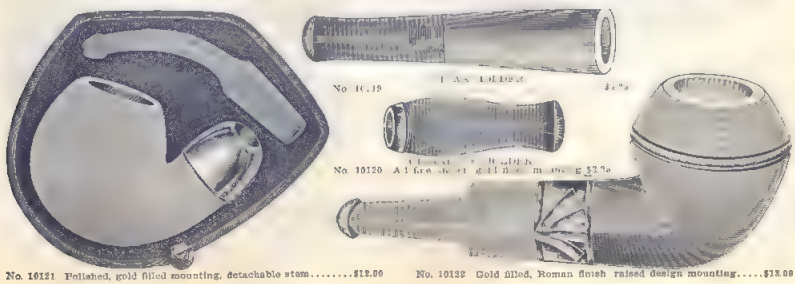
No. 10114 All fine selected amber [illegible] $18.00

No. 10115 Gold filled, polished, chased mounting $12.00

No. 10116 Gold filled polished, chased mountings.....$15.00

No. 10117 Gold [illegible] mountings $[illegible]

[illegible] Gold [illegible] mounting $[illegible]



No. 10119 [illegible]

No. 10120 A fine selected [illegible] $3.00

No. 10121 Polished, gold filled mounting, detachable stem.....$12.00

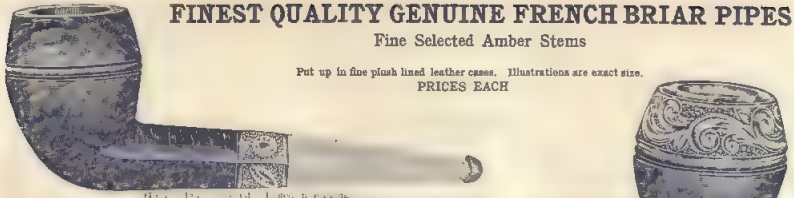
No. 10122 Gold filled, Roman finish raised design mounting.....$12.00

FINEST QUALITY GENUINE FRENCH BRIAR PIPES

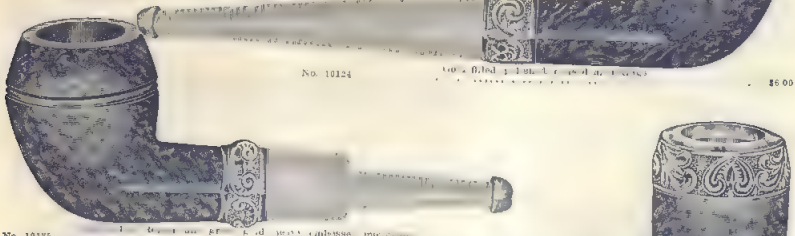
Fine Selected Amber Stems

Put up in fine plush lined leather cases. Illustrations are exact size.

PRICES EACH

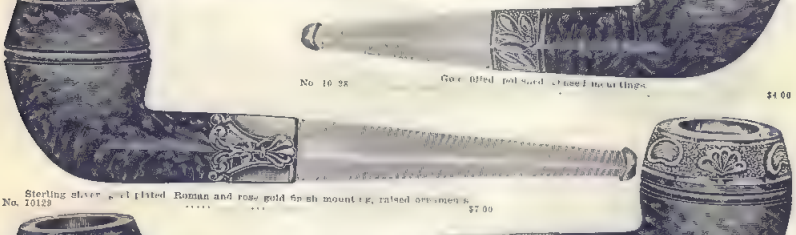


No. 10123 . . . $5.75

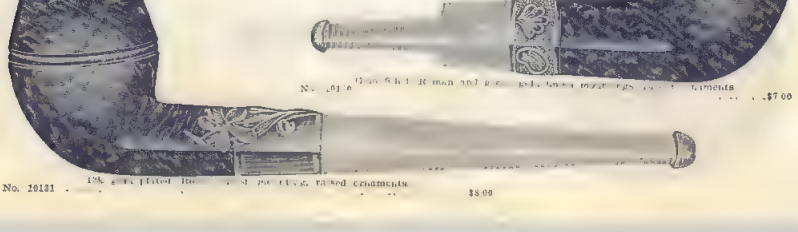


No. 10124 . . . $6.00

No. 10125 . . . $5.00



No. 10126 . . . $5.00



No. 10127 . . . $5.00

No. 10128 . . . $4.00

No. 10129 . . . $7.00

No. 10130 . . . $7.00

No. 10131 . . . $8.00

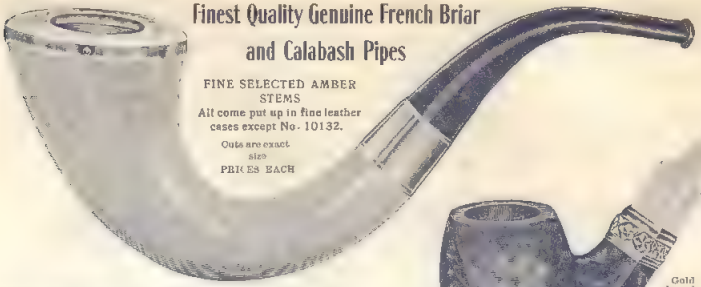
Finest Quality Genuine French Briar and Calabash Pipes

FINE SELECTED AMBER STEMS

All come put up in fine leather cases except No. 10132.

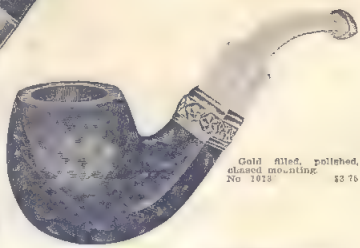
Cuts are exact size

PRICES EACH



Finest selected genuine Calabash Vienna meerschaum [illegible] amber mouthpiece, silver mounted and vulcanized rubber stem

No. 10132 ..... $8.00

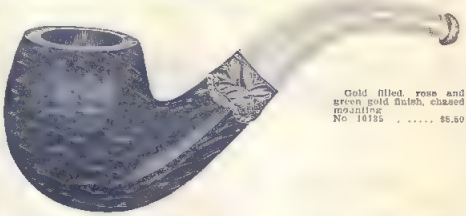


Gold filled, polished, chased mounting

No. 10131 ..... $3.75

Gold filled, polished, chased mounting

No. 10134 .... $4.00

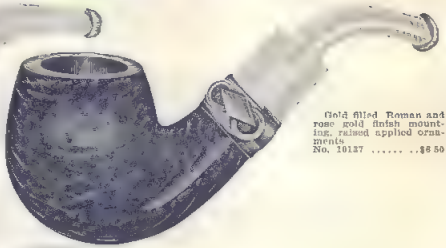


Gold filled, rose and green gold finish, chased mounting

No. 10135 ..... $5.50

Gold filled, polished, chased mountings

No. 10136 ..... $5.00

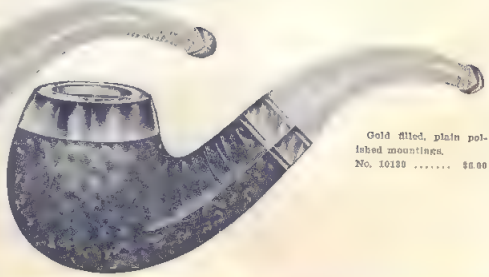


Gold filled Roman and rose gold finish mounting, raised applied ornaments

No. 10137 ..... $6.50

12k gold plate, Roman finish mounting, raised embossed ornaments.

No. 10138 ..... $8.00



Gold filled, plain polished mountings.

No. 10139 ..... $6.00

Fine Hand Carved Imported Cuckoo, and Quail and Cuckoo Clocks

Imported from the Black Forest (Schwarzwald), Germany.

Each Clock is Adjusted, Regulated and Packed in a Strong Wooden Box. Breakage Guaranteed.

Prices Each

CUCKOO CLOCK.

Height, 19 inches; width, 14 inches; dial, 5¼ inches. Half hour strike and call. Solid walnut or oak. Large size G. K. movement. Front of case made of three layers of wood.

No. 33 Each.....$19.35

CUCKOO CLOCKS

Height, 19 inches; width, 14 inches; dial, 5¼ inches. Half-hour strike and call. Solid walnut or oak. Large size G. K. movement. Front of case made of three layers of wood

No. 37 Each.....$20.00

CUCKOO CLOCK.

Height, 21 inches; width, 15 inches; dial, 5¾ inches. Half hour strike and call. Solid walnut or oak. Large size G. K. movement. Front of case made of three layers of wood.

No. 24 Each.....$23.35

CUCKOO CLOCK.

Height, 20 inches width, 13½ inches; dial, 5¼ inches. Half hour strike and call. Solid walnut or oak. Large size G. K. movement. Front of case made of three layers of wood.

No 42 Each.....$25.35

CUCKOO CLOCK.

Height, 25 inches; width, 16 inches; dial, 6 inches. Solid walnut or oak. Large size G. K. movement. Front of case made of three layers of wood.

No. 84 Each.....$34.00

QUAIL AND CUCKOO CLOCK.

Height, 21 inches; width, 14 inches; dial, 5 inches. Quarter-hour strike and call. Solid walnut only, with inlaid ash, ebony and mahogany ornaments. Three-quarter size G. K. movement Front of case made of three layers of wood.

No. 45 Each.....$26.70

FINE HAND CARVED IMPORTED CUCKOO CLOCKS

Imported from the Black Forest, (Schwarzwald) Germany.

TRADE MARK

Our genuine Black Forest Cuckoo Clocks are stamped with above trade mark.

The carving of these clocks is done by hand by the natives of the Black Forest, in solid walnut or oak and is especially fine. The figures are accurate and lifelike.

The fronts of these clocks are made of three layers of wood of opposite grain and are set together to prevent warping and cracking

The movements are made of the best tempered steel and brass, with screw pillars, patent ratchet wheels, new escape wheel, and are well finished and adjusted. The same are guaranteed to be correct timekeepers.

Every clock that leaves our establishment has been run and thoroughly tested here before it is sent out, and is warranted, if properly used, to be a good timekeeper. Should a case crack or split it will be exchanged or repaired without charge.

Each clock is adjusted, regulated and packed in a strong wooden box.

Breakage guaranteed.

CUCKOO CLOCK.

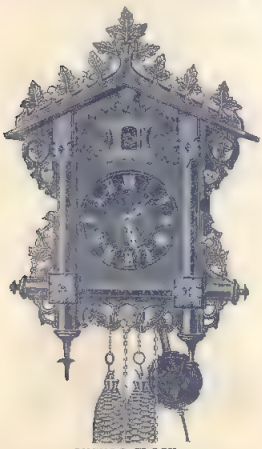
Height, 19 inches; width, 12 inches. Half hour strike and call. German walnut or oak with inlaid ash, ebony and mahogany ornaments. Small size movement. Front of case made of three layers of wood.

No. 44 Each. $11 7

CUCKOO CLOCK.

Height, 21 inches; width, 14 inches. Dial, 5½ inches. Half-hour strike and call. Solid walnut or oak case, with inlaid ash, ebony and mahogany ornaments. Large size G. K. movement. Front of case made of three layers of wood.

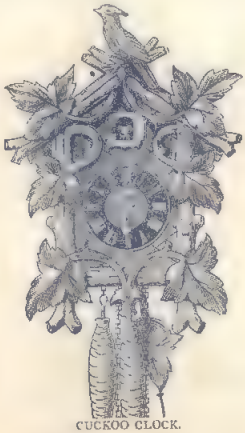
No. 55 Each..... ..$13.10



CUCKOO CLOCK

Height, 23½ inches; width, 15¾ inches. Dial 6¾ inches. Half-hour strike and call. Solid walnut or oak with cherry ornaments. Large size G. K. movement. Front of case made of three layers of wood

No. 37 Each..... $15 35



CUCKOO CLOCK.

Height, 20 inches; width, 14 inches. Dial, 5½ inches. Half-hour strike and call. Solid walnut or oak. Large size G. K. movement. Front of case made of three layers of wood.

No. 32 Each $18.70

CUCKOO CLOCK.

Height, 17 inches; width, 12 inches. Dial, 5¼ inches. Half-hour strike and call. German walnut only. Large size G. K movement. Front of case made of three layers of wood.

No. 66 Each.... .. . . . $16 00

Fine Hand Carved Imported Quail and Cuckoo Clocks

Each Clock is Adjusted, Regulated and Packed in a Strong Wooden Box. Breakage Guaranteed.
Imported from the Black Forest (Schwarzwald), Germany. **Prices Each**

QUAIL AND CUCKOO CLOCK.
Solid walnut only. Height, 20 inches; width, 13 inches; dial, 5 inches. Quarter-hour strike and call. Three-quarter size G. K. movement. Front of case made of three layers of wood.
No. 68 Each $28.70

QUAIL AND CUCKOO CLOCK.
Solid walnut or oak. Height, 26 inches; width, 17 inches; dial, 6⅝ inches. Quarter-hour strike and call. Large size G. K. movement. Front of case made of three layers of wood.
No. 10 Each $45.35

QUAIL AND CUCKOO CLOCK.
Solid walnut or oak with inlaid ash, ebony and mahogany ornaments. Height, 29 inches; width, 17 inches; dial, 6⅜ inches. Quarter-hour strike and call. Large size G. K. movement. Front of case made of three layers of wood.
No. 7 Each $51.36

QUAIL AND CUCKOO CLOCK.
Solid walnut or oak. Height, 21¾ inches; width, 16½ inches; dial 6⅝ inches. Quarter-hour strike and call. Large size G. K. movement. Front of case made of three layers of wood.
No. 46 Each $36.70

QUAIL AND CUCKOO CLOCK.
Solid walnut or oak. Height, 21 inches; width, 16 inches; dial, 6⅝ inches. Quarter-hour strike and call. Large size G. K. movement. Front of case made of three layers of wood.
No. 8 Each $35.35

QUAIL AND CUCKOO CLOCK.
Solid walnut or oak. Height, 26 inches. width, 18 inches; dial, 6⅝ inches. Quarter hour strike and call. Large size G. K. movement. Front of case made of three layers of wood.
No. 11 Each $48 00

"HARDSOCG Q" HEAVY GEARED STEEL POST DRILL

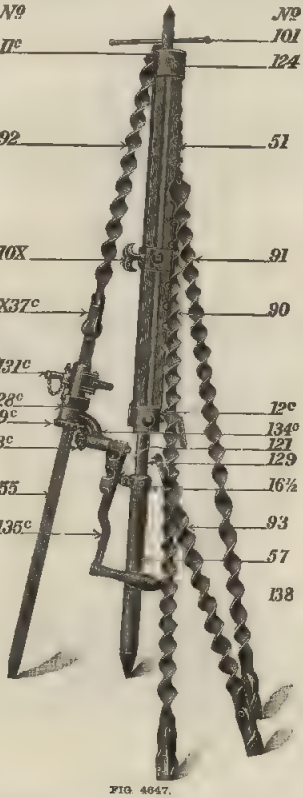
CORRECTED PRICE LIST OF "Q" DRILLS AND REPAIRS

BE SURE TO STATE SIZE POST OR HEIGHT WANTED

		List Price
	Price of Post Drill, Side Gear, 2, 4 and 6 foot augers	$15.00
	" " " " End " 2, 4 " 6 " "	12.75
	" " Grip " Side " 2, 4 " 6 " "	13.50
	" " " " End " 2, 4 " 6 " "	11.25
	For price of Drill with 2 ft. extension instead of 6 ft. auger, deduct from list	1.00
	" " " " less 6 ft. auger, deduct from above list	2.25
	" " " " less boot, deduct from above list	1.00
3 C,	or Small Cog Wheel	.50
9 C,	or Large " "	.75
26	Patent Double Acting Adjustable Crank	1.50
28 C,	Frame only for Gearing	1.00
32 C,	Casting that attaches Chair to Star Grip	.50
x37 C,	Square Socket that goes on Auger, New, large heavy Patented Spiral	.50
37 C,	" " old pattern, Light	.35
55	Thread Bar, End Gear, $2.00, Side Gear, Slotted	2.50
68	New Pattern Steel Grip Bar, with hole in end for chair for Grip Drill	1.50
71	Plain Wedge that fits on Square Grip Bar	.25
79	New Grip complete, with Wedge, Chair and Bolt	2.75
90	Six foot Coal Auger (sharped ready for use) heavy socket	3.00
91	Four " " " " " " " " " "	2.00
92	Two " " " " " " " " " "	1.00
93	Auger Extension (two feet long) with heavy patent socket	1.15
100	Pin for Open or Hinged Boxing	.05
107	Complete Chair which supports Boxing (Grip Drill)	.60
115	Journal only for Small Cog Wheel	.50
131 C,	Hinged or Open Boxing, 6, 8, 10, 12 threads	1.15
134 C,	Gearing only, for Drill	3.50
135 C,	Crank only	.75
141	Tail Screw (that secures castings 20 C and 32 C to Grip Bars)	.15
11 C,	or Casting for Post (Jack-Screw 101 fits in)	1.00
12 C,	" " " " (129 fits in)	1.00
16½	Ring for 1¼ inch Boot	.15
51	Ribbed Side Bar for New Style Post (give number of post)	1.00
57	Small Boot (1¼ inches in diameter)	1.00
101	Jack-Screw	.60
121	Tail Set Screw	.20
124	Bolt for Post having Ribbed Side-bars	.10
129	Small sized Stem (that fits into 57)	.75
133	Post complete (No. 3, 4 and 5)	4.50
	Same, Nos. 1 and 2	5.00

HARDSOCG "Q" HEAVY GEARED STEEL POST DRILL

THE STRONGEST COAL DRILL MADE



№		№	
	Jack Screw Casting	11c	
		101	Jack Screw
		124	Bolt for 11 C
92	Two Foot Auger		
		51	Corrugated Side Bar
10X	Patent Sliding Notches		
		91	Four Foot Auger
X37c	Patent Spiral Socket		
		90	Six Foot Auger
131c	Patent Open Boxing		
28c	Frame for Gearing		
		12c	Extens'n Casting
9c	Large Cog Wheel		
		134c	Comp'lt side Gear
3c	Small Cog Wheel	121	Tail Set Screw
		129	1¼ Inch Stem
55	Steel Feed Bar		
		16½	Ring for Boot
135c	Improved Crank		
		93	Pat. 2 ft. Extens'n
		57	Boot 1¼ inch
		138	Steel Post Comp'lt

No. 1-5 to 8½ feet
" 2-4 " 7¾ "
" 3-3 " 6½ "
" 3¼-2½ to 5½ "
" 4-2 to 4½ feet
" 6-1½ " 3 "

FIG. 4647.

Now fitted with new Patented Reversible separate steel notches (if desired) and regular notches. New patent crank. Patent extension, heavier sockets. Stands alone in its class for hard drilling coal. Look for "*Hardsocg*" *on the castings.*

THE "A" STEEL POST DRILL

SIDE OR END GEAR

Furnished either with regular notches or with both sliding and regular on same machine.

Best cheap Side Gear Post Drill.

FIG. 4648

Sometimes called the Alton Drill, a lighter machine than the Q. Drill.

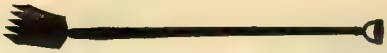
The Superior of any Drills made by others.

Better metal in the boxings and more carefully made.

Prices of Post Drill, Side Gear, 2, 4 and 6 foot auger	$15.00
" " " " End " 2, 4 " 6 " "	12.75
" " Grip " Side " 2, 4 " 6 " "	13.50
" " " " End " 2, 4 " 6 " "	11.25
For price of Drill with 2 foot extension instead of 6 ft. auger, deduct from list,	1.00
" " " " less 6 ft. auger, deduct from list	2.25
" " " " " boot, deduct from list	1.00

No. 7	Boxing end gear only	$0.90	No. 177	4 foot auger	2.00
" 169	New end gear box	1.00	" 176	2 foot auger	1.00
" 221	Small cog	.50	" 192	2 foot extension	1.15
" 220	Large "	.75	" 107	Chair and tail nut for grip	.60
" 222	New spiral auger socket	.50	" 209	New frictionless crank	.75
" 225	High carbon steel thread Bar end gear no slot	2.00		Grip complete with yoke	2.75
" 178	Same slotted side gear	2.50	" 186A	Side gear boxing	1.50
" 177½	6 foot auger	3.00	" 139A	Gear complete less	2.20
			" 149	Tail nut for chair	.20

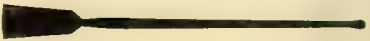
Wood's Ice Tools



Each.

No. 470—Floor Shaver. 5-Tooth. Width Blade, 6 inches. Length, 4 ft. 10 in. Weight, 6 pounds.... $6.00

Floor Shavers are very useful in leveling a floor of ice in house or vessel, being bent for convenience in operating. The toothed, wide edge cuts rapidly and easily, and the patented, rocking blade causes the "feed" to be accurate. For smoothing roughly frozen sidewalks, the Floor Shaver is unsurpassed.



Each

No. 468—Socket Chisel. Blade, 12 x 5½ inches. Length, 4 ft. 10 in Weight, 10 pounds. $7.00

Per dozen.

No. 520—Ice Hooks. Boston Pattern. 4 feet. Weight, 37 pounds per dozen..... $18.50
" " " " 4½ " " 40 " " " 19.00
" " " " 5 " " 43 " " " 20.00

No. 604. No. 607. No. 620. No. 621.

Per dozen.

No. 604—Ice Axe. Boston Pattern. Blade, 1¾ x 8inches 30-inch Handle. Weight, 4 pounds... $40.00
No. 607— " " New York " " 3 x 7½ " 30 " " " 4½ " ... 40.00
No. 620—Ice Hatchet. Southern Pattern. Square Edge 3¼-inch Blade. 16-inch Handle. Wt., 3½ lbs. 32.00
No. 621— " " " " Round " 2¾ " " 16 " " " 3½ " 32.00

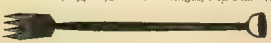
No. 640. No. 642.

Each.

No. 640—Ice Saw. Wood Handle. 30-inch Blade..... $3.50
No. 642— " " Oval Iron Handle. 30-inch Blade.. . .. . 3.50

Each.

No. 650—Ice Shaver. 4 points. Blade, 4¾ x 7½ inches. Length, 3 ft. 4 in. Weight, 4 pounds..... $4.50



Each.

No. 652—Ice Shaver. 4 points. Blade. 4¾ x 7½ inches Length, 3 ft. 6 in Weigar, 4½ pounds... $4.50

Each.

No. 665—Ice Breaker. 7¾-inch Tines. 3 inches wide at points. Length, 4 ft. 1 in. Weight, 5½ lbs. $7.00

Ice Tongs

Duck Bill. Plain Handles.

Jessop Steel Points. Drop Forged Handles.

We have carefully studied the various patterns of Ice Tongs on the market and this style is conceded by ice men to be just right They embody strength with lightness and are the best shapes for grasping and holding a piece of ice

	0	1	2	3
Nos.				
Opens, inches	11	14	17	20
Per Dozen	$18.00	23.00	27.00	32.00

Wood's Ice Tools

No. 630. No. 632. No. 636.

Per dozen

No. 630—Wood's Ice Splitting Awl. Needle Point. 3/16 x 6-inch Blade. Finest Tempered Steel $2 00
No. 632— " " " " " " 5/16 x 6 " " " " " " 3 00
No. 636—Wood's Ice Chipper. 3 x 6-inch Blade. Finest Tempered Steel 8 00

No. 700. No. 704

Each.

No. 700—Wood's Iron Clad Ice Scale. 200 pounds by 5 pounds. Weight, 5¼ po nds. $3.50
No. 704—Wood's Straight Ice Scale. 80 pounds by 1 pound. Weight, 6¼ pounds 2 00
" " " 150 " " 1 " " " 6¼ " 4.50
" " " 350 " " 2 " " " 6¼ " 5 00

Per dozen

No. 540—Wood's Ice Tongs. Family Size. 13 inches. Weight, per dozen, 24 pounds . . $30 00
" " " Small " 14½ " " " " " 39 " . . . 32 00
" " " Medium " 16½ " " " " " 46 " . . 34 00
" " " Loading " 24 " " " " " 62 " . . 38 00

No. 54. No. 52P.

Each.

No. 54 —Creasy Ice Breaker. Takes Ice 10 x 13 inches, any length. Weight, 530 pounds $59.00
No. 52P— " " " " " 14 x 14 " " " " " 930 " " 85.00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

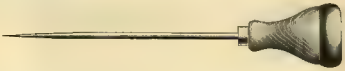
Ice Picks and Chisels

Per dozen.

No. 103—Needle Point Pick. 8½ inches long. Beech Handle..... $1.40

Per dozen.

No 1004—Needle Point Pick. 9½ inches long..... $1.00



Per dozen.

No. 2004—Needle Point Pick. Heavily Tinned Cap 9½ inches long..... $1.30

Per dozen.

No. 1002—Steel Awl Pick. Heavy Tinned Cap. 8¾ inches long..... $1.60

Per dozen.

No. 901—Sliding Pick. Heavy Japanned Head. 8-inch Steel Awl..... $2.50

Per dozen.

No. 1897—Ice Chisel. Steel Blade. Heavy Tinned Cap. 10½ inches long.. ..... $2 30

Per dozen.

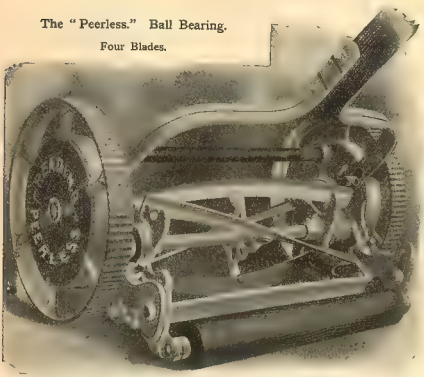
No. 1001—Ice Chisel. Steel Blade Heavy Tinned Cap. 10½ inches long..... $3.70

Half Dozen in a Box.

Lawn Mowers

The "Peerless." Ball Bearing.

Four Blades.



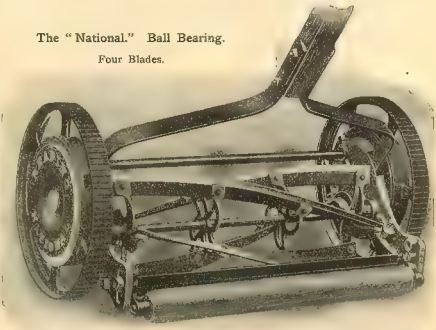
Bicycle cone bearings. Made of tool steel, hardened and ground Driving wheels, 10 inches high. White and carmine decorations, with gold striping

This machine is the highest grade Lawn Mower that can be produced and is made of the best material throughout. The knives on reel and lower cutter bar are made of tool steel and tempered

The "Peerless"....	Size, inches.....	14	16	18	20
	Each	$16.00	17.50	19.00	20.50

The "National." Ball Bearing.

Four Blades.

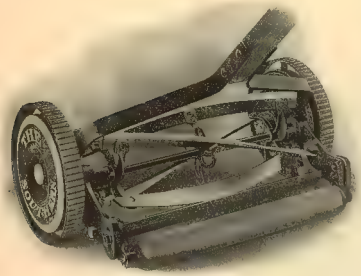


Bicycle cone bearings. Made of tool steel, hardened and ground. Driving wheels, 10 inches high. Ornamentation, aluminum with bronze striping on black.

The National Mower is made of the same high grade material as the Peerless. The knives on reel and lower cutter bar are made of tool steel and tempered

The "National"....	Size, inches.	14	16	18	20
	Each	$12.00	13 00	14.00	15.00

Lawn Mowers



The "Southern."

Parallel Bearings. Four Blades.

8-inch Wheels.

This is a high grade Mower. The workmanship and material are equal to the highest priced mowers made. The knives in reel and lower cutter bar are made of tool steel and highly tempered. Decorations carmine with aluminum striping

The "Southern"...	Size, inches	12	14	16	18
	Each . . .	$6.50	7 50	8 50	9.50

The "Little Nipper."

Parallel Bearings. Three Blades.

8-inch Wheels.

The Little Nipper Mower is a low priced machine, but the quality of material and workmanship are the same as in the higher priced machines. Handsomely decorated in bright green with aluminum striping

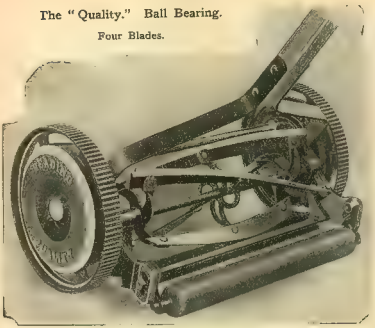
The "Little Nipper"	Size, inches	12	14
	Each	$5 00	6.00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Lawn Mowers

The "Quality." Ball Bearing.

Four Blades.



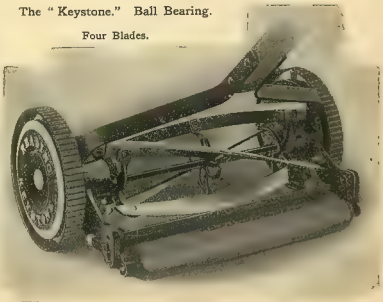
Bicycle Cone Bearings, made of tool steel, hardened and ground. Driving wheels 9 inches high. Green finish. Trimmings aluminum and bronze

The same high grade material is used in these Mowers as in the Peerless. The knives on reel and lower cutter bar are made of tool steel and tempered.

The "Quality".	Size, inches.	14	16	18	20
	Each	$10 50	11 50	12 50	13.50

The "Keystone." Ball Bearing.

Four Blades.



Bicycle cone bearings, made of tool steel, hardened and ground. Driving wheels 8 inches high. Carmine finish. Bronze striping.

Workmanship and material in above Mowers are same as in Peerless Machines. The knives in reel and lower cutter bar are made of tool steel and tempered.

The "Keystone"...	Size, inches	14	16	18
	Each	$7 50	8.50	9.50

GENTLEMEN'S FINE BLACK SILK UMBRELLAS AND CANES

All Come with Patent Detachable Handles. Simple and Reliable. Fitted with Steel Rods, Silk Cases, Tassels and Cords and Tape Edge. Quality Guaranteed. PRICES EACH.

ILLUSTRATIONS ARE ONE-HALF SIZE

FINE CAPE HORN HANDLE

Gold filled, chased cap and bands

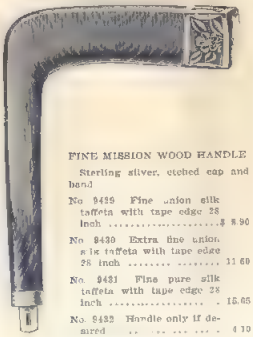
No. 9424 Fine union silk taffeta with tape edge 28 inch .... $ 8.90

No. 9425 Extra fine union silk taffeta with tape edge 28 inch 11.60

No. 9426 Fine pure silk taffeta with tape edge 28 inch 15.65

No. 9427 Cane to match ....

No. 9428 Handle only if desired 4.10



FINE MISSION WOOD HANDLE

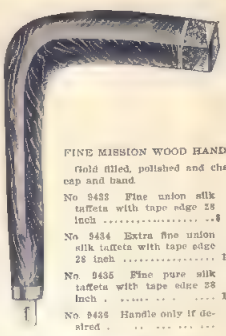
Sterling silver, etched cap and band

No. 9429 Fine union silk taffeta with tape edge 28 inch .... $ 8.90

No. 9430 Extra fine union silk taffeta with tape edge 28 inch 11.60

No. 9431 Fine pure silk taffeta with tape edge 28 inch 15.65

No. 9432 Handle only if desired 4.10



FINE MISSION WOOD HANDLE.

Gold filled, polished and chased cap and band.

No. 9433 Fine union silk taffeta with tape edge 28 inch .... $ 8.90

No. 9434 Extra fine union silk taffeta with tape edge 28 inch 11.60

No. 9435 Fine pure silk taffeta with tape edge 28 inch 15.65

No. 9436 Handle only if desired 4.10

FINE MISSION WOOD HANDLE

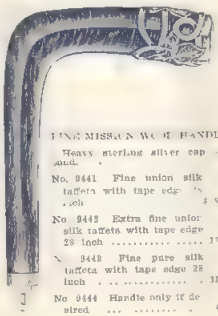
Heavy sterling silver etched cap and band

No. 9437 Fine union silk taffeta with tape edge 28 inch .... $ 8.90

No. 9438 Extra fine union silk taffeta with tape edge 28 inch 11.60

No. 9439 Fine pure silk taffeta with tape edge 28 inch 15.65

No. 9440 Handle only if desired 4.10



FINE MISSION WOOD HANDLE

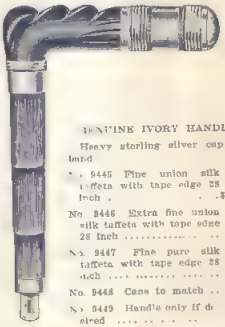
Heavy sterling silver cap and band.

No. 9441 Fine union silk taffeta with tape edge 28 inch .... $ 8.90

No. 9442 Extra fine union silk taffeta with tape edge 28 inch 11.60

No. 9443 Fine pure silk taffeta with tape edge 28 inch 15.65

No. 9444 Handle only if desired 4.10



GENUINE IVORY HANDLE.

Heavy sterling silver cap and band

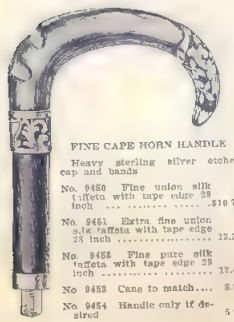
No. 9445 Fine union silk taffeta with tape edge 28 inch $10.70

No. 9446 Extra fine union silk taffeta with tape edge 28 inch 13.35

No. 9447 Fine pure silk taffeta with tape edge 28 inch 17.45

No. 9448 Cane to match 8.90

No. 9449 Handle only if desired 5.90



FINE CAPE HORN HANDLE

Heavy sterling silver etched cap and bands

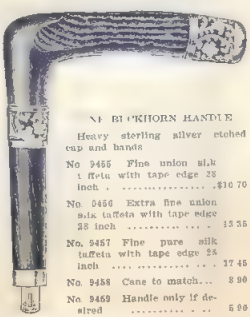
No. 9450 Fine union silk taffeta with tape edge 28 inch $10.70

No. 9451 Extra fine union silk taffeta with tape edge 28 inch 13.35

No. 9452 Fine pure silk taffeta with tape edge 28 inch 17.45

No. 9453 Cane to match.... 8.90

No. 9454 Handle only if desired 5.90



NE BUCKHORN HANDLE

Heavy sterling silver etched cap and bands

No. 9455 Fine union silk taffeta with tape edge 28 inch $10.70

No. 9456 Extra fine union silk taffeta with tape edge 28 inch 13.35

No. 9457 Fine pure silk taffeta with tape edge 28 inch 17.45

No. 9458 Cane to match.... 8.90

No. 9459 Handle only if desired 5.90

GENUINE IVORY HANDLE.

Heavy polished and chased cap and bands

No. 9460 Fine union silk taffeta with tape edge 28 inch $12.45

No. 9461 Extra fine union silk taffeta with tape edge 28 inch 15.10

No. 9462 Fine pure silk taffeta with tape edge 28 inch 19.20

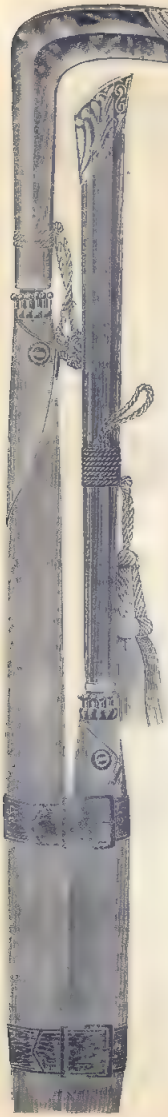
No. 9463 Cane to match.... 10.70

No. 9464 Handle only if desired 7.65

Gentlemen's Fine Black Silk Umbrellas and Canes

All come with Patent Detachable Handles. Simple and Reliable. Fitted with Steel Rods, Silk Cases, Tassels, Cords and Tape Edges. Quality Guaranteed. PRICES EACH.

Illustrations of handles are one-half size.



No. 9467. Fine union silk taffeta with tape edge

No. 9468 Fine union silk taffeta with tape edge, 28 inch $12.45

No. 9469 Extra fine union silk taffeta with tape edge, 28 inch 15.10

No. 9470 Fine pure silk taffeta with tape edge, 28 inch 19.20

No. 9471 Cane to match 10.70

No. 9472 Handle only, if desired 7.65

FINE BUCKHORN HANDLE

Heavy sterling silver ornamented cap and bands

GENUINE PIMENTA, DARK RED WOOD HANDLE

Sterling silver cap and bands.

No. 9473 Fine union silk taffeta with tape edge, 28 inch $12.45

No. 9474 Extra fine union silk taffeta with tape edge, 28 inch 15.10

No. 9475 Fine pure silk taffeta with tape edge 28 inch 19.20

No. 9476 Cane to match 10.70

No. 9477 Handle only, if desired 7.65

GENUINE IVORY HANDLE

Heavy gold filled chased and polished cap and bands

No. 9478 Fine union silk taffeta with tape edge, 28 inch $16.00

No. 9479 Extra fine union silk taffeta with tape edge, 28 inch 19.70

No. 9480 Fine pure silk taffeta with tape edge, 28 inch 22.85

No. 9481 Handle only, if desired 11.40

HEAVY GOLD FILLED HANDLE

Polished and chased

No. 9482 Fine union silk taffeta with tape edge, 28 inch $16.00

No. 9483 Extra fine union silk taffeta with tape edge, 28 inch 19.70

No. 9484 Fine pure silk taffeta with tape edge, 28 inch 22.85

No. 9485 Cane to match, ebony stick 14.25

No. 9486 Handle only, if desired 11.40

FINE BUCKHORN HANDLE.

Sterling silver ornamented bands.

No. 9487 Fine union silk taffeta with tape edge, 28 inch $16.00

No. 9488 Extra fine union silk taffeta with tape edge, 28 inch 19.70

No. 9489 Fine pure silk taffeta with tape edge, 28 inch 22.85

No. 9490 Cane to match 14.25

No. 9491 Handle only, if desired 11.40

GENUINE FRENCH HORN HANDLE.

Heavy gold filled polished and chased cap and bands

No. 9492 Fine union silk taffeta with tape edge, 28 inch $16.00

No. 9493 Extra fine union silk taffeta with tape edge, 28 inch. 19.70

No. 9494 Fine pure silk taffeta with tape edge, 28 inch 22.80

No. 9495 Cane to match 14.25

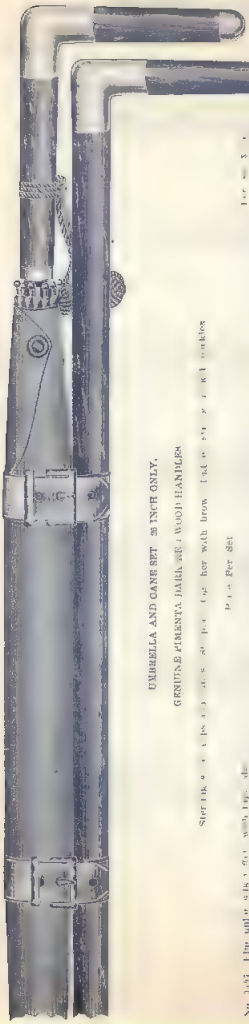
No. 9496 Handle only, if desired 11.40

Gentlemen's Fine Black Silk Umbrellas and Canes

All Come With Patent Detachable Handles. Simple and Reliable Fitted with Steel Rods, Silk Cases, Tassels and Cords and Tape Edge.

Illustrations of Handles are One-Half Size

Quality Guaranteed. Prices Each



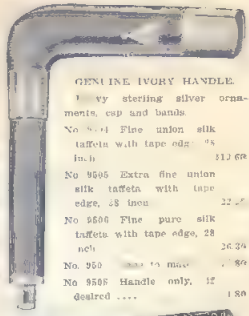
HEAVY POLISHED STERLING SILVER HANDLE

No. 9500 Fine union silk taffeta with tape edge, 28 inch ..... $ 3.60

No. 950[illegible]. Extra fine union silk taffeta with tape edge, 28 inch ..... 22.[illegible]

No. [illegible] Fine pure silk taffeta with tape edge, 28 inch ..... [illegible].80

No. [illegible] Handle only, if desired ..... 1.[illegible]



GENUINE IVORY HANDLE.

Heavy sterling silver ornaments, cap and bands.

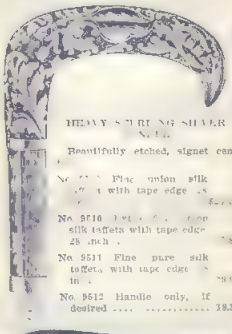
No. [illegible] Fine union silk taffeta with tape edge, [illegible] inch $13.60

No. 9505 Extra fine union silk taffeta with tape edge, 28 inch ..... 22.[illegible]

No. 9506 Fine pure silk taffeta with tape edge, 28 inch 26.34

No. 950[illegible] to match ..... [illegible].80

No. 9508 Handle only, if desired 1.80



HEAVY STERLING SILVER [illegible]

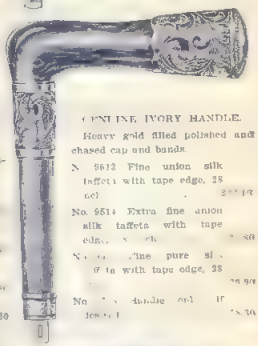
Beautifully etched, signet cap, [illegible]

No. [illegible] Fine union silk [illegible] with tape edge, [illegible] ..... $[illegible]

No. 9510 Extra fine union silk taffeta with tape edge, 28 inch ..... [illegible]

No. 9511 Fine pure silk taffeta with tape edge, [illegible] ..... [illegible].90

No. 9512 Handle only, if desired 18.30



GENUINE IVORY HANDLE.

Heavy gold filled polished and chased cap and bands.

No. 9513 Fine union silk taffeta with tape edge, 28 inch ..... $[illegible].[illegible]

No. 9514 Extra fine union silk taffeta with tape edge, [illegible] inch ..... [illegible].80

No. [illegible] Fine pure silk taffeta with tape edge, 28 inch ..... [illegible].90

No. [illegible] Handle only, if desired 18.30

GENUINE IVORY HANDLE

Heavy sterling silver ornamented, cap and bands

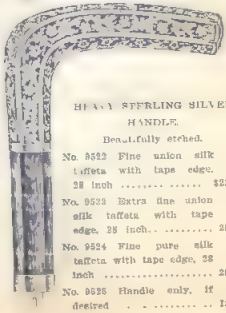
No. 9517 Fine union silk taffeta with tape edge, 28 inch $24.10

No. 9518 Extra fine union silk taffeta with tape edge, 28 inch..... ..... 25.80

No. 9519 Fine pure silk taffeta with tape edge, 28 inch 30.90

No. 9520 Cane to match... 21.35

No. 9521 Handle only, if desired 18.30



HEAVY STERLING SILVER HANDLE.

Beautifully etched.

No. 9522 Fine union silk taffeta with tape edge, 28 inch $23.10

No. 9523 Extra fine union silk taffeta with tape edge, 28 inch.. ..... 25.80

No. 9524 Fine pure silk taffeta with tape edge, 28 inch 28.90

No. 9525 Handle only, if desired 18.30

THE "PITTSBURGH" SINGLE SPRING BOURDON STEAM AND PRESSURE GAGES

SPRINGS OF SOLID DRAWN TUBE

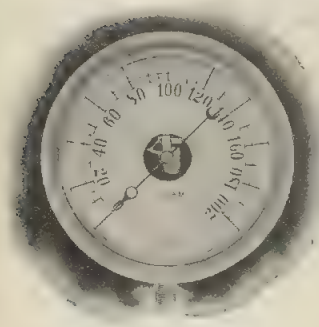


FIG. 770.

Sectional

FIG. 771.

PRICES INCLUDING COCK

Size	Iron Case, Brass Ring	Iron Cases, N. P. Ring	Brass Case	N. P. Case
3 Inch Dial	$6.00	$6.15	$8.00	$8.80
3½ " "	7.00	7 15	9.00	9.75
4½ " "	8.00	8.20	10.00	11.00
5 " "	8.00	8.20	11 00	12.00
5½ " "	10.00	10.25	12.00	13.25
6 " "	13.00	13.50	16.00	17.50
6¾ " "	16.00	16.60	20.00	22.00
8½ " "	22.00	22.75	30.00	32.50
10 " "	32.00	33.00	40.00	43.00
12 " "	50 00	51.50	75.00	79.00

In ordering always state **size** wanted, whether **brass** or **iron case**, and **maximum pressure.**

All gages graduated from an open mercury column.

Name on dials of gages free of charge when ordered in quantities.

An allowance of ten cents each will be made for cocks if not wanted.

Special net prices on sizes below 5½ inches when ordered in quantities.

A Syphon must be used with these gages.

THE "PITTSBURGH" DOUBLE SPRING BOURDON STEAM AND PRESSURE GAGES

SPRINGS OF SOLID DRAWN SEAMLESS TUBE

FIG 772.

Sectional

FIG. 773.

PRICES INCLUDING COCK

Size	Iron Case, Japanned	Iron Case, N. P. Ring	Brass Case	N. P. Case
4½ Inch Dial	$10.00	$10.20	$12.00	$13.00
5 " "	11.00	11.20	13.00	14.00
5½ " "	12.00	12.25	14.00	15.25
6 " "	15.00	15.50	18.00	19.50
6¾ " "	18.00	18.60	22.00	24.00
8½ " "	25.00	25.75	34.00	36.50
10 " "	37.00	38.00	45.00	48.00
12 " "	55.00	56.50	80.00	84.00

Please state **size, pressure** and whether **iron** or **brass case.**

This Gage is made with the Lane Improvement of the Double Spring and is much preferable to the ordinary single-spring gage. Many of the objectionable features of the Bourdon Gage are obviated in this gage, there being no vibration of the hand, and with the short springs prevents freezing up in case of exposure.

Well adapted for Locomotives, Marine and Portable Boilers.

Every Gage tested accurately from mercury columns.

No extra cost for name on dials when ordered in quantities.

A syphon must invariably be used.

THE "PITTSBURGH" IMPROVED VACUUM GAGES

SPRINGS OF SOLID DRAWN TUBE

FIG. 774.

The Pittsburgh Improved Vacuum Gages are graduated to indicate vacuum in square inches of mercury.

30 Inches equals about 15 pounds.

PRICES INCLUDING COCK

Size	Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case
3 Inch Dial.	$6.00	$6.15	$8.00	$8.60
3½ " "	7.00	7.18	9.00	9.75
4½ " "	8.00	8.20	10.00	11.00
5 " "	8.00	8.20	11.00	12.00
5½ " "	10.00	10.25	12.00	13.25
6 " "	13.00	13.50	16.00	17.50
6½ " "	16.00	16.60	20.00	22.00
8½ " "	22.00	22.75	30.00	32.50
10 " "	32.00	33.00	40.00	43.00
12 " "	50.00	51.50	75.00	79.00

IN ORDERING ALWAYS STATE WHETHER BRASS OR IRON CASE IS DESIRED

By S. L. G.

When the Paige-Detroit Motor Car Company announced its intention of putting on the market a car equipped with a three cylinder two cycle motor considerable comment was indulged in by the trade because of the unusual nature of the machine as outlined. The automobile world was familiar with single cylinder engines, it was likewise accustomed to even numbers of cylinders—two, four or six, but a three cylinder motor was different. And still more remarkable it was of two cycle type. Now that it has become an established factor in the low priced field consideration of the principles incorporated and the ends attained proves doubly interesting as an object lesson in out-of-the-ordinary application of internal combustion motive power.

The Paige Company claims for its product the same continuous driving power provided by a six cylinder motor of four cycle design, with only a fraction of the working parts to get out of order. It also asserts that greater flexibility and smoother running results than in the case of an ordinary four cycle power plant, owing to the increased number of impulses and continuous torque.

Although built as a light roadster or a coupe, having seats for only two persons, the Paige-Detroit has been provided with plenty of power, the motor being rated at 25 H. P. Naturally interest centers in this feature of the car; for in spite of its widespread use for marine purposes, as well as its employment with pronounced success by some motor car makers, the two cycle engine is still more or less of a novelty in an automobile.

For absolute simplicity and absence of small parts to get out of adjustment and require replacement the Paige-Detroit motor stands forth conspicuously, the crank shaft, pistons and connecting rods being the only parts that can be classed as live members. In point of efficiency and economy of operation it also appeals.

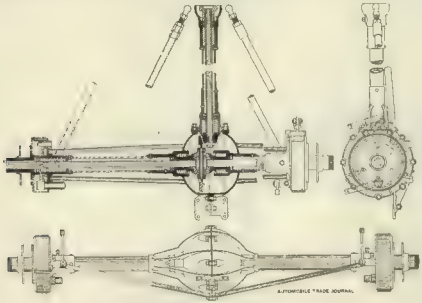
Paige-Detroit.

Fig. 1. This little car has a three cylinder, two cycle engine; cylinders 3½x4 in.; integral water jackets; thermo-syphon circulation; fly wheel at the front; wheel base 90 in.

graded leaves. The front ends of the springs are fastened to the extremities of the side members, and shackles on the side members of the frame provide rear anchorage. Instead of the customary double side springs at the rear a single full elliptic spring, set crosswise is used at the back, it being supported at the bottom on an extension of the rear axle housing, and at the top by the frame. This spring is 36 inches long, 2 inches wide, with five leaves, and gives a very pleasing riding effect.

On the Road.

Recently the writer was permitted to ascertain at first hand what the Paige-Detroit can accomplish when on the road under trying conditions. With W. C. Kron, of the Detroit Motor Sales Company, local distributors of the Paige-Detroit, at the wheel, the car was headed out into the country for Clarkston, thirty-eight miles away as the objective point. As it was not a case of establishing a speed record, for the trip was purely for pleasure, the distance was negotiated in two hours and five minutes. From Detroit to Pontiac, twenty-six miles, the road was in fair condition, although a portion of the way considerable sand was encountered, and there were several good hills to negotiate. From Pontiac on there was little but sand and hills, the road being of a nature calculated to test in the most thorough manner the staying qualities of a car. Indeed, if one was to judge by the number of machines that were having trouble of one sort or another along the way, the course was living up to its fondest hopes. Only twice on the way was it found advisable to shift from high speed, this being in negotiating two particularly bad hills. Absolutely no trouble was experienced, and the car seemed at all times to have plenty of power in reserve, although heavier machines came to grief. The next day the return trip was made in a little more leisurely manner, and with equally satisfactory results. No exact record of the fuel consumed was kept, but a little less than five gallons was required for the round trip, including a limited use of the car while at Clarkston.



Line Drawing Paige-Detroit Rear Axle Assembly.

Fig. 6. This construction is notable, owing to the peculiar transversely mounted full elliptic spring supported by the differential housing. Hyatt bearings are used throughout and ball thrusts each side of the differential and back of the bevel pinion.

Sheet Steel Body.

Thirty-two inch wheels with 3 inch tires are fitted to the car, which has a 90 inch wheel base. One point of note is the body of the Paige-Detroit, which is stamped from sheet steel, with a wooden framework used as anchorage for the upholstering. The guards and running board also are of metal, the latter being short in conformity with the long fenders. The same chassis is also fitted with a coupe body which is interchangeable, making it possible for the owner to have both a summer and a winter car.

Finish and Colors.

Standard finish for the car is dark blue, with straw colored running gear. The roadster is provided with a double seat, with a 14 gallon gasoline tank carried just at the rear adding to the racy appearance of the machine, which is further accentuated by fenders of a sweeping design. Regular equipment includes oil side and tail lights horn, set of tools and body irons for top.

The coupe lists for $1400 and the roadster for $920 including top.

The cast iron crank case is split horizontally through the crank shaft center, the bearing caps being secured to the upper half of the case by heavy studs, while scraped joints on the lower half fit tightly to the caps and guard against leakage of oil.

Simple Oiling System.

Lubrication is by force feed from a mechanical oiler carried under the floor board of the car just forward of the transmission gear case. Four leads extend to the main bearings and three to the cylinders, providing ample lubrication, which in the case of a two cycle engine is a very simple problem, owing to the small number of parts.

Front View Paige-Detroit.

Fig. 4. Note the neat radiator outline, the webbed mud guards, and the tubular front axle. The wheels are 32 in. and fitted with 3 in. tires. The body is of sheet steel.

An automatic carburetor is used. Ignition is by jump spark high tension magneto driven by gears from the crankshaft, the magneto being carried on a bracket at the right side of the motor.

Carrying out the unit principle in the power plant, the clutch and change gear are carried in a case bolted to the rear of the motor. The clutch is cone type, leather faced, and is held in engagement by several helical springs which allow ready adjustment of the clutch pressure. The clutch is actuated by a pedal, reaction when the clutch is disengaged being taken by a ball thrust bearing.

The Two Speed Change Gear.

The transmission is of semi-selective order, with two speeds forward and reverse, this being sufficient for a car of this type. Gears are controlled by means of a hand lever at the side working in a quadrant. Direct drive is by a jaw clutch, while instead of the usual method of having the reverse gear slide along the shaft, it swings in, the arrangement being both simple and effective. External bushings are of die cast babbitt, and the internal of bronze.

Power is transmitted to the semi-floating rear axle through a 40 point carbon steel propeller shaft one inch in diameter, with a squared connection which has a universal movement, ball ended struts connecting the gear case with the rear axle ends and serving to push the car. Directly to the rear of the change gear housing is a case in which the globe on the front end of the propeller shaft housing slides, protecting the universal joint.

Rear Axle Assembly.

The rear axle housing is made from steel castings and 2¼ inch tubing, forced in place and secured by rivets, and strengthened by two heavy truss rods. The rear axles are of 40 point carbon steel, 1¼ inches in diameter, with the wheels keyed to them. Rear wheel bearings are of Hyatt roller type, with a ball thrust bearing in the differential on the driving pinion. A 1 inch steel tubing strut rod anchored to either side of the rear axle housing and carried forward to a cross member of the chassis gives added stability and insures accurate alignment of the rear axle.

In the matter of brakes the Paige-Detroit is well taken care of, two sets of liberal dimensions in relation to the car acting on the rear wheel drums. The internal expanding brakes, operated by a foot lever, are 8 inches in diameter with a 2 inch face, and are covered with Raybestos. The external emergency brakes are of slightly larger diameter, with 2 inch face, and are actuated by a lever at the driver's side.

The front axle is tubular, dropped for the greater part of its length, with front wheels running on cup and cone ball bearings.

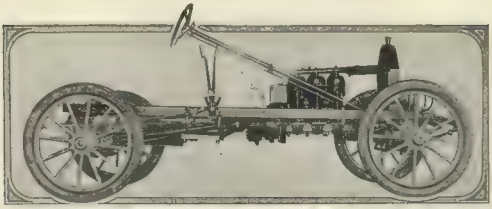
Steering gear is of worm and sector type, with steering connections at the rear and dropped to conform to the shape of the axle, cross connection being made from the left pivot lever to a rack and pinion gear. The appearance of the car is materially enhanced by the rakishly inclined 1¼ inch steering post, surmounted by a 15 inch hand wheel, with control lever carried below the wheel on a quadrant.

Frame and Springs.

The frame is of pressed steel, liberally cross braced, hot riveted, with straight side members and dropped cross members. The front springs are of semi-elliptic pattern, 1¾ inches wide and 34½ inches long, with five

Paige-Detroit Two Cycle Crank Shaft.

Fig. 5. Attention is called to the long and large main bearings. Also to the wide connecting rod bearings. The crank throws are at 120 degrees.



Paige-Detroit Chassis.

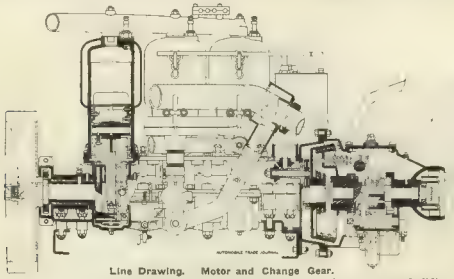
Fig. 2. View showing the three cylinder, two cycle motor, and two speed and reverse sliding change gear in place in the frame. Frame is not riveted with straight side members and dropped cross members. Front springs semi-elliptic; 34½ in. long. A single full elliptic spring 36 in. long, 2 in. wide, 5 leaves, placed crosswise at the rear, is used.

The Power Unit.

The power plant is of unit type, and follows the accepted practice of three point suspension. Selected fine grey iron is used for the cylinders, which are cast separately and bolted to the upper section of the cast iron crank case. The cylinder bore is 3¾ inches and the stroke 4 inches. Liberal integral water jackets are provided, and cooling is by water through a thermo-syphon system and vertical tube radiator, with unusually large water pipes. A 15 inch fan bladed fly wheel at the forward end of the motor also assists in the cooling process

The three port motor has a bridged inlet and single transfer and exhaust ports. Inlet and exhaust manifolds are carried on the left side of the motor, the exhaust being uppermost. Both are held in place against the cylinders by three clamps that make them easily removable. The by-pass problem has been worked out in an ingenious and efficient manner, a brass screen being secured between two pressed copper cups, each of which is perforated with holes a quarter of an inch or so in diameter. This device is simple, and is so arranged that it can be readily removed for cleaning should such an operation ever become necessary.

The cast grey iron pistons are fitted with five eccentric ground diagonally lapped rings with chord type deflectors. Three of these rings are located above the wrist pin, which is of hardened ground steel. The two below act as oil rings. Connecting rods are drop forged I-beam sections of steel a trifle less than two strokes long, and are bronze bushed above and babbitt lined below. The 1½ inch crank shaft has very liberal bearings, and all its bushings are of die cast babbitt.



Line Drawing. Motor and Change Gear.

Fig. 3. It will be noticed that the fly wheel is at the front, and the two speed sliding change gear is at the rear of the compact two cycle engine, thus forming a unit construction which is three-point-suspended. The motor is liberally water jacketed, and the bi-passes fitted with brass screen.

Fig. 5. The rear axle is of the floating type, of drawn steel, attention is called to the large inspection plate, which allows of easy adjustment of the bearings, or, if necessary, the removal of the differential as a unit. Bearings are Timken roller of ample size, and provision is made for taking up wear. The brakes are internal and external, and afford a braking surface that is exceptionally large.

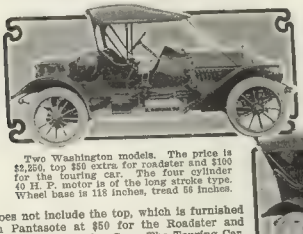
stopping. Two strut rods secured to the frame by ball joints take all driving thrusts, so that the springs, which are shackeled at both ends, are left free to absorb road shocks.

Electric Lighting.

A drive shaft is mounted on the left side of the motor to accommodate an Apple Electric Dynamo. This lighting equipment, which is extra, consists of the dynamo, a voltammeter, a large storage battery, and a "Load Regulator," and furnishes steady powerful lights whenever required, whether the motor be at high, intermediate or low speed, or at rest.

THE 1911 WASHINGTON

The Carter Motor Car Corporation, of Washington, D. C., makers of the "Washington" car, have announced their 1911 line. Three Models, a Roadster seating two with trunk, a Baby Tonneau seating four, and a Touring Car seating five or seven, will be sold for a uniform price of $2250. This price



Two Washington models. The price is $2,250, top $50 extra for roadster and $100 for the touring car. The four cylinder 40 H. P. motor is of the long stroke type. Wheel base is 118 inches, tread 56 inches.

does not include the top, which is furnished in Pantasote at $50 for the Roadster and $100 for the Touring Car. The Touring Car, which is furnished with fore doors if desired, may be converted into a seven passenger car by the addition of swivel seats.

The 40 h. p. motor has four cylinders, cast in pairs, and is of the long stroke type, the cylinders having a bore of 4⅛ inches and stroke of 5¼ inches. Ignition is by Bosch dual system, with Bosch high tension magneto, and batteries. The carburetor is of the multiple jet type. Lubrication is by a self-contained oiling system in the crank case, oil circulation being by gear driven pump. The motor is water cooled, circulation being by a gear driven pump. The fan is ball bearing.

The clutch is of the multiple disc type. Drive is by shaft to the rear axle. The universal joints are the well known Hartford, oil and dust proof, self-lubricating, and made of the best drop forgings of a special grade of steel.

The rear axle is of the floating type, of vanadium steel, with carefully fitted imported German ball bearings. The front axle of I beam section, is equipped with similar bearings.

Two sets of brakes are used, external contracting and internal expanding.

The frame is of pressed steel. Springs are 2 inches wide, semi-elliptic in front and three-quarters elliptic in the rear. The wheel base is 118 inches, tread 56 inches.

The artillery type wheels have 1¾ inch spokes and are equipped with quick detachable rims, carrying 36x4 inch Diamond tires as regular equipment, other makes being optional.

The regular equipment consists of two side lamps, one rear lamp, two 10½ inch headlights, Type B Prest-O-Lite tank, horn, full set of tools, 60 mile speedometer and 8-day clock.

Chas. D. Shain, maker of ignition and other motor specialties, has moved from 70 Murray street, New York City, to the Automobile Building, 1926 Broadway.

The Connecticut Telephone and Electric Co. and the Connecticut Shock Absorber Co., of Meriden, Conn., have terminated the sales arrangements which existed between them and the United Manufacturers, and the sale of Connecticut automobile and ignition specialties will be taken care of from the main office in Meriden, Conn.

power to the rear wheels and a minimum wear in the universal joints is one or the features of the straight line drive in the Speedwell car. The propeller shaft is forged from nickel steel, and the universal joint cross retainer is formed in the same operation, and is carefully toughened and hardened by a special heat treatment. Two universal joints packed in hard grease, and protected by a tight metal casing afford great flexibility.

Control

As we have noted previously in the fore door types of body the gear shift and emergency brake levers are placed in the centre. Spark and throttle are controlled by convenient levers mounted on top of the steering wheel, and an improved form of foot throttle is also provided. All connections are made through ball joints, to elliminate lost motion. There are four brakes of simple and heavy construction acting on the rear wheel brake drums, and afford great braking power—approximately one inch of braking surface for every seven pounds weight. Equalizers are provided on both running and emergency brakes. The lining is a special compound which the manufacturers state had never been known to burn.

An 18 in. steering wheel with an aluminum web and Circassian walnut rim is used on all models. The worm and gear are of vanadium steel carefully hardened and ground, enclosed in a heavy housing, and simple means are provided for taking up wear in the bearings and between the worm gear. Lubrication is by a large force feed grease cup. A feature of this gear which is in strong contrast to others is that four changes of teeth are allowed.

Frame and Springs.

The frame has been carefully designed to provide the maximum amount of strength and safety with the minimum weight. It is of channel construction, pressed from special carbon steel, and heat treated. Being narrowed at the front, short turns are made possible, while widening at the offsets gives a greater strength. Cross members are provided with integral gussets, which are hot riveted to the main channels. The size of all the gusset plates has been increased and two extra ones have been added. A liberal spring action is provided by the arch of the frame over the rear axle, and the body is thus kept low without sacrifice of road clearance.

The springs are of the semi-elliptic type, of the finest spring steel, and are carefully adjusted before being put in place. Small lips on each leaf secure perfect alignment, and all spring eyes are provided with hardened steel bushings. The springs are 2¼ inches wide, and almost flat. They are very flexible, but so tough that breakage is reduced to a minimum. The front springs are 40 inches long, and the rear 56 inches.

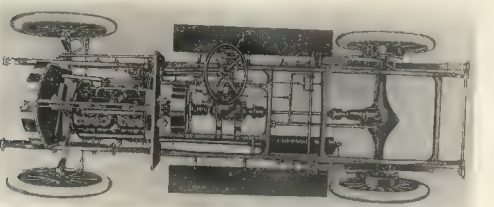


Fig 4. This view shows the chassis used on 1911 Speedwell models. The wheel base is 121 inches, tread 56 inches. Tires are 36x4, front and rear, except on the 7 passenger touring car and limousine, which have 36x4½ front and rear. The rims are Firestone demountable. All bearings are Timken roller, including wheels, axles and transmission. Rear axle is of floating type.

Axles.

The front axle is a one piece drop forging of I beam section, carefully heat treated, with spring seats forged integral. The steering knuckles are mounted on large Timken Roller Bearings, making steering very easy and eliminating wear at this most important point. The tie rod connecting the steering arms is in the rear of the axle, and the reach rod is above it, so that both are fully protected from collision with objects projecting from the road. The rear axle is of the floating type, the drawn steel housing carrying the weight of the car. A large inspection plate allows of easy adjustment of the bearings, or if necessary the differential may be removed as a unit. The pinion shaft, bevel gears and differential run on Timken bearings of ample size, and provision is made for taking up wear.

A torsion tube cushioned between oil tempered springs and housed in a dust proof case absorbs the shocks of starting and

mixture at all speeds is given. The mixing chamber is hot water jacketed, thus insuring uniform temperature at all seasons of the year, and complete vaporization of the charge.

The ignition is again, as last year, the Bosch Dual System, consisting of a Bosch High Tension Magneto, and a single non-vibrating coil. A self starting mechanism is contained in a small brass case, set into the dash. Both systems operate upon a single set of spark plugs and the usual timer is omitted, as the circuit breaker of the battery system is mounted on the armature shaft of the magneto.

Lubrication.

The lubrication is by a self contained force feed system, with a reservoir holding 1½ gallons of oil in the lower part of the crank case. A gear pump located in this reservoir pumps the oil though a small glass gauge on the dash, and thence to all bearings. A constant level of oil is maintained in the crank case by means of an overflow pipe which leads the surplus oil through a strainer, and thence to the reservoir to be again circulated. The height of oil in the reservoir is indicated by an oil gauge conveniently located between the pairs of cylinders.

Clutch and Transmission.

The clutch is of the leather faced cone type, and is self contained, the end thrust being absorbed by a large ball bearing, while a universal joint is inserted between the motor and transmission. The clutch engages gently, and the control is extremely flexible. It is released by a yoke, operating on a ball thrust ring contained in a dust tight housing.

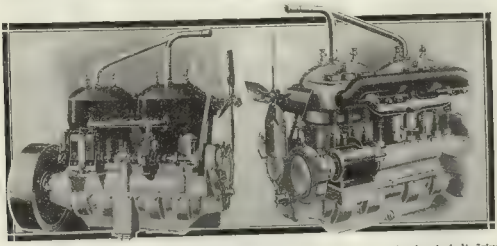


Fig. 2. On the left is seen the magneto side of the Speedwell motor. The fan is belt driven from the magneto driving shaft, as is the centrifugal water pump. The valve side of the motor is seen on the right. Attention is called to the installation of the Apple Electric Dynamo for lighting purposes, which is, however, not standard equipment.

The transmission is of the selective type and has three speeds forward and one reverse. The sliding gears drive the shaft through four splines milled from the solid metal. The gears are cut from special vanadium steel and like the shaft are heat treated. Both shafts are mounted on Timken Roller Bearings, and a plain roller bearing on the telescoping gear eliminates the usual bronze bushings. All working parts are carefully ground to a micrometer fit, and stuffing boxes are provided on the drive shaft, which eliminate any leakage of oil. A high efficiency in the transmission of

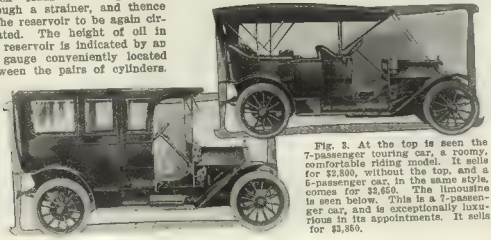


Fig. 3. At the top is seen the 7-passenger touring car, a roomy, comfortable riding model. It sells for $2,800, without the top, and a 5-passenger car, in the same style, comes for $2,650. The limousine is seen below. This is a 7-passenger car, and is exceptionally luxurious in its appointments. It sells for $3,850.

1911 SPEEDWELL

The 1911 line of the Speedwell Motor Car Co., of Dayton, O., maker of the well known Speedwell car, will consist of one standard chassis of 121 in. wheel base with 50 H. P. motor; 4 cyl. watercooled; furnished with touring torpedo, toy tonneau roadster, close coupled and limousine bodies in both open and fore door types. The Company states that as their line was standardized last season there will be no material changes in the 1911 cars over the 1910 models. The

Fig. 1. Speedwell Model 11-F Special. This car, with its straight lines set off by the curves of the mud guards, has a very striking appearance. Brake and gear shift levers are in the center. It is a large roomy car, and is built for seven passengers at $2900. The same style for five passengers, sells for $2750.

equipment this year, however, will include demountable rims and Prest-O-Lite tanks. A feature worth noting is that the fore door type of cars will have the gear shift and emergency brake levers in the centre where they may be quickly reached and manipulated without reaching over the side of the car. Also the engine has been equipped with a special gear and a small cover so that an Apple Electric Dynamo may be installed for lighting purposes.

Motor.

The Speedwell Motor is of the four cylinder, four cycle type. It has a bore of 5 inches, and a stroke of 5 inches, and develops 50 H. P. It has been designed with the idea of eliminating all unnecessary complications, and producing a motor which combines simplicity with durability and efficiency. The cylinders are cast in pairs with integral cylinder heads and valve chambers, but have separate water jacket heads. This construction permits more accurate work in the foundry in placing the water jacket cores, and insures uniform thickness of the cylinder walls. Reverberatory air furnace iron is used, and the cylinders are reamed and ground to a mirror finish. The pistons are cast from the same metal, and are accurately ground. Each piston has four ground eccentric expansion rings with lap joints. The intake and exhaust valves are mechanically operated by a single cam shaft, and have a nickel head electrically welded to a carbon steel stem, and are interchangeable. The crank case is made of the best nickel aluminum alloy. The flanges are wide, and the bolts are closely spaced to prevent any leakage of oil. The crank shaft is forged from a special alloy steel of high tensile strength and is carefully heat treated. The cams are integral with the cam shaft which is of high carbon steel drop forged. It runs in three long white bronze bearings fitted with oil pockets. The gears are helically cut of bronze and steel. The bearings are white bronze scraped and fitted with great care. The fly wheel and crank shaft are both carefully balanced.

Carburetor and Ignition.

The carburetor is fully automatic at all speeds, having three adjustments for low, intermediate and high speeds. Carburetor adjustments are made during road tests at the factory, and do not need attention. The gasoline opening into the mixing chamber is varied in direct proportion to the amount which the throttle is open, so that a quick

POCKET KNIVES

CHALLENGE

No. 22713

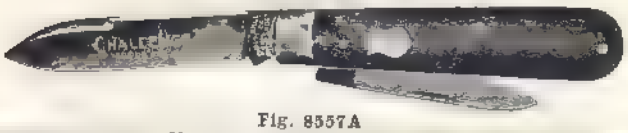


Fig. 8557A

Price, No. 2715, 2-Blade Jack Knife, 3½-inch Ebony Handle, Steel Bolster, Spear Point Blade, Shield, Glazed	per dozen	7.00
" No. 2715½, same as above with Cocoa Bola Handle and Clip Blade	"	7.00
" No. 2717, same as above, with Stag Handle and Spear Point Blade	"	7.00
" No. 087, 2-Blade Jack Knife, 3¼-inch Stag Handle, Steel Lined, Single Steel Bolster, Spear Point Blade, Glazed	"	4.50
" No. 083, same as No. 087 but Ebony Handle	"	4.50

No. 2332

Fig. 8557B

Price, No. 2332, 2-Blade Jack Knife, 3⅝-inch Ebony Handle, Brass Lined, Double Steel Bolster, Spear Point Blade with Shield, Glazed	per dozen	8.00
" No. 2333, same as No. 2332 but Single Bolster	"	8.00
" No. 2332½, same as No. 2332 except Redwood Handle	"	8.00
" No. 4212, 2-Blade Jack Knife, 3¼-inch Ebony Handle, Brass Lined, Double German Silver Bolster, Spear Point Blade, with Shield, Glazed	"	8.00
" No. 8546, 2-Blade Jack Knife, 3¼-inch Stag Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade with Shield, Half Polished	"	8.50
" No. 9022, 2-Blade Jack Knife, 3⅝-inch Ebony Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, with Shield	"	10.00
" No. 2345½, 2-Blade Jack Knife, 3⅝-inch Cocoa Bola Handle, Brass Lined, Single Steel Bolster, Clip Blade with Shield	"	8.00

No. 2116

Fig. 8557C

Price, No. 2116, 2-Blade Jack Knife, 3½-inch Stag Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, Shield, Half Polished	per dozen	12.00
" No. 9276, 2-Blade Jack Knife, 3¾-inch Stag Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, Shield, Half Polished	"	12.00
" No. 2342, 2-Blade Jack Knife, 3¾-inch Ebony Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, Shield, Half Polished		12.00

POCKET KNIVES

CHALLENGE

No. 2782

Fig. 8558A

Price	No 2782, 2-Blade Jack Knife, 3½-inch Ebony Handle, Brass Lined, German Silver Bolsters, Spear Point Blade, Shield, Half Polished, Gun Stock Pattern	per dozen	12.00
"	No 5247, 2-Blade Jack Knife 3½ inch Stag Handle, Brass Lined, Single German Silver Bolsters, Spear Point Blade, Shield, Half Polished, Easy Opener	"	12.00
"	No 2742 2-Blade Jack Knife, 4¼-inch Ebony Handle, Brass Lined, Double German Silver Bolsters Spear Point Blade, Shield, Glazed Gladiator Pattern	"	15.00
"	No 8752, 2-Blade Small Jack Knife, 3-inch Ebony Handle Brass Lined Double German Silver Bolsters, Spear Point Blade Shield, Half Polished	"	8.00
"	No 8792, 2-Blade Small Jack Knife, 3-inch Ebony Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, Shield Half Polished	"	8.00
"	No 8770 2-Blade Small Jack Knife, 2¾-inch Stag Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade Half Polished	"	8.00

No. 5017¼

Fig. 8558B

Price	No 5017¼ 2-Blade Jack Knife, 3⅞-inch Stag Handle, Brass Lined Single German Silver Bolsters, One Large Clip Blade, One Large Sheeping Blade, Shield, Half Polished	per dozen	13 00

No. 3056

Fig. 8558C

Price	No 3056, 3 Blade Premium Stock Knife, 3⅞-inch Stag Handle Brass Lined, Double German Silver Bolsters, Shield, Half Polished	per dozen	18.00
	No 2826, 2 Blade, 3 Spring Cattle Knife, 3⅝-inch Stag Handle, Brass Lined, Double Steel Bolsters Shield, Half Polished	"	18.00
	No 3222, 3 Blade Cow Boys' Cattle Knife, 3⅝-inch Ebony Handle Brass Lined, Double German Silver Bolsters, Clip Blade, Shield, Half Polished	"	16 00

POCKET KNIVES

CHALLENGE

No. 3506

Fig. 3559A

Price No. 3506, 3-Blade Cattle Knife, 3 ¼-inch Stag Handle, Brass Lined Double German Silver Bolsters, Spear Point Blade, Shield Glazed ..... per dozen 14 00

No. 597

Fig. 3559B

Price No. 597, 2-Blade Jack Knife, Selected Imitation Onyx Handle, Brass Lined Double German Silver Bolsters, Spear Point Blade, Shield, Half Polished ..... per dozen 10.00

No. 48150, 2-Blade Jack Knife, Selected Imitation Onyx Handle, Brass Lined, Nickel Silver Bolsters, Spear Point Blade, Shield, Glazed ..... " 9 00

No. 48177, 2-Blade Jack Knife, 3⅛-inch Stag Handle, Brass Lined Nickel Silver Bolsters, Spear Point Blade, Shield, Glazed ..... " 8.00

No. 3660P, 2-Blade Jack Knife, 3-inch Pearl Handle, Brass Lined Double German Silver Bolsters, Spear Point Blade, Half Polished. " 18.00

No. 6160P

Fig. 3559C

Price, No. 6160P, 2-Blade Penknife, 3-inch Pearl Handle, Brass Lined, Top German Silver Bolsters, Spear Point Blade, Shield, Half Polished ..... per dozen 18.00

" No. 3756, 3-Blade Penknife, 3-inch Stag Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, Shield, Half Polished ..... " 16.00

" No. 3606, 3-Blade Penknife, 3½-inch Stag Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade, Half Polished " 15.00

" No. 6160P, 2-Blade Penknife, 3-inch Pearl Handle, Brass Lined, Double German Silver Bolsters, Spear Point Blade " 20.00

POCKET KNIVES AND RAZORS

CHALLENGE KNIVES

No. 9276½

Fig. 8560A

Price No. 9276½, 2 Blade Jack Knife, Stag Handle, German Silver Bolster Brass Lined, Large Clip Blade, Half Polished, Length, 3¼ inches	per dozen	12.00

No. 5080P

Fig. 8560B

Price, No. 5080P, 2 Blade Penknife 3½-inch Pearl Handle Brass Lined, Double German Silver Bolsters Spear Point Blade, Shield, Polished	per dozen	21 00
Price, No. 5086, Same as above, but Stag Handle	"	8 00
" No. 5636, 2-Blade Penknife, 3½-inch Stag Handle, Brass Lined, Tip German Silver Bolsters, Spear Point Blade, Shield Polished	"	8 00
" No. 5630 SP, Same as No. 5636 but with Imitation Pearl Handle	"	2 00

CHALLENGE RAZORS

No. 959

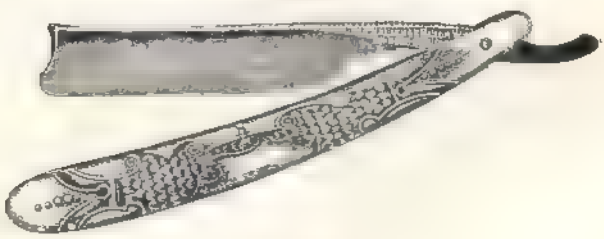
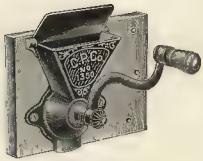


Fig. 8560C

Price No. 1162, Black Hard Rubber Razor, 5/8-inch Blade	per dozen	21 00
No. 959, Black Horn Razor, 5/8-inch Blade, Long Cut	"	24 00
No. 1152, Black Handle Razor, 5/8-inch Blade, Full Hollow Ground	"	27 00
No. 960, Fancy White Handle Razor, 5/8-inch Blade Etched in Gold	"	27 00
No. 993, Beaded Handle Razor, 5/8-inch Blade, Ivory Tang	"	30 00
No. 1149, Black Handle Razor, 5/8-inch Blade, Pearl Tang	"	36 00

COFFEE MILLS

SIDE



NO. 1350
CAST IRON

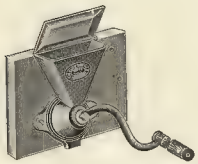
No. 1350 Japanned	Per dozen $5.00

One dozen in a Case.

NO. 94
CAST IRON, SHEET STEEL HOPPER

No. 94 Japanned	Per dozen $4.50

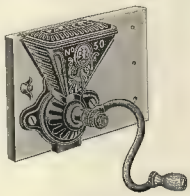
Half dozen in a Case



NO. 134
CAST IRON, SHEET STEEL HOPPER

No. 134 Japanned	Per dozen $6.50

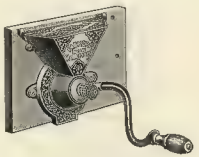
One dozen in a Case.



NO. 50 AND 60
CAST IRON, SHEET STEEL HOPPER

No. 50 Small Size, Japanned	Per dozen $7.50
" 60 Medium " "	" " 8.50

Half dozen in a Case.



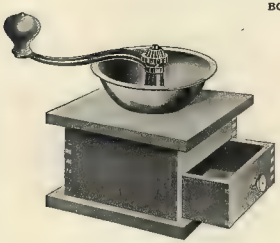
NO. 350 TO 370
COPPERED IRON

No. 350 Small Size	Per dozen $8.00
" 360 Medium "	" " 9.00
" 370 Large "	" " 11.00

Half dozen in a Case.

COFFEE MILLS

BOX



NO. 950

Dimensions, 5⅛ x 6⅜ x 3¼ inches.

Castings, Brown Enameled Finish.

No. 950 Tin Hopper ..... Per dozen $4.00

Six dozen in a Crate.

"MONITOR"

Bottom and Body are Drawn from a Single Piece of Sheet Steel. Seamless Steel Coffee Receptacle. Black Japanned Finish.

"Monitor," All Metal ..... Per dozen $4.00

One dozen in a Case.

NO. 1088

Dimensions, 6 x 6 x 3¾ inches.

Castings, Black Japanned.

No. 1088 Raised Iron Hopper ..... Per dozen $5.50

Half dozen in a Box.

NO. 42

Dimensions, 6¾ x 6 x 5 inches.

Wood Bottom Drawer with Rounded Tin Sides. Castings, Coppered Finish, Cast Iron Swinging Cover, with Grasping Handle.

No. 42 Sunken Hopper ..... Per dozen $8.25

Half dozen in a Box.

COFFEE MILLS

BOX

NO. 104 AND 103
JAPANNED IRON HOPPER

No.	Dimensions, inches.	Per dozen.
104	5 x 5 x 5	$8.50
103	5 x 5 x 8⅜	9.00

Half dozen in a Case.

NO. 1080

Dimensions, 6⅝ x 6⅝ x 7⅞ inches.

Wood Bottom Drawer with Rounded Tin Sides, Castings Brown Enameled Finish.

No. 1080 One Pound Mill ..... Per dozen $9.00

Half dozen in a Box.

NO. 331 AND 332
SUNKEN HOPPER, SLIDING COVER
WITH HANDLE

Coppered Iron Castings.

No.	Dimensions, inches.	Per dozen.
331 Medium	4¾ x 5 x 4¾	$13.00
332 Large	5¼ x 5¾ x 4¾	14.00

Half dozen in a Case.

NO. 430, 431 AND 432
SUNKEN HOPPER, SLIDING COVER
WITH HANDLE

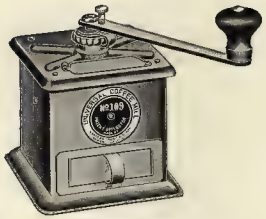
Coppered Iron Castings.

No.	Dimensions, inches.	Per dozen.
430 Small	4¾ x 4¾ x 4¾	$11.50
431 Medium	5 x 5 x 4¾	13.00
432 Large Top	5 x 5 x 4¾	14.00

Half dozen in a Case.

COFFEE MILLS

BOX



"UNIVERSAL," NO. 109
STEEL CASES, BLACK ENAMEL FINISH
Height, 6 inches. Patent Adjusting Device.

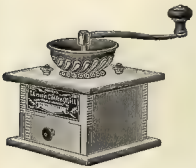
No. 109 "Universal" ..... Per dozen $12.00

Half dozen in a Case.

"UNIVERSAL," NO. 110
STEEL CASES, BLACK ENAMEL FINISH
Height, 8¾ inches. Patent Adjusting Device.

No. 110 "Universal" ..... Per dozen $15.00

Half dozen in a Case.



NO. 25
JAPANNED IRON HOPPER, DOUBLE GRINDERS
Dimensions, 6¼x6x4¾ inches.

No. 25 ..... Per dozen $15.00

Half dozen in a Case.

NO. 35 AND 45
BRITANNIA HOPPER, DOUBLE GRINDERS
Dimensions, 6¼x6x4¾ inches.

No.	Per dozen.
35 Varnished Boxes	$17.50
45 Black Walnut Boxes	18.00

Half dozen in a Case.

"CROWN," NO. 1
STEEL CASES, BLACK ENAMEL FINISH, BRASS SLIDING COVER

No.	Per dozen.
1 "Crown," 7x6x6 inches.	$20.00

Half dozen in a Case.

ATKINS CROSS-CUT SAWS

COMMON TOOTH

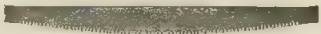


FIG 5604.

Sizes . . . . . Feet	4	4½	5	5½	6	6½	7	7½	8
Regular, 14 x 16 gauge, without handles each	$1.84	$2.08	$2.30	$2.54	$2.76	$3.00	$3.22	$3.46	$3.68
Thin-Back, 14x18 gauge, without handles, "	2.00	2.26	2.50	2.76	3.00	3.25	3.50	3.75	4.00

NOTE.—We can furnish any of the above saws in Silver-Steel. "Regular Gauge" is 14 x 16 gauge. "Thin-Back" is 14 x 18 gauge.

REX, PENNSYLVANIA PATTERN

FIG 5605

Segment-Ground. 14 gauge on tooth edge. 16 gauge on ends on back edge. 19 gauge at center on back edge.

Sizes. . . . . Feet	4	4½	5	5½	6	6½	7	7½	8
Special Steel, without handles.....each	$2.80	$3.30	$3.85	$4.45	$5.10	$5.70	$6.40	$7.10	$7.80
Silver " " ..... "	3.10	3.60	4.10	4.80	5.60	6.40	7.30	8.30	9.30

PERFECTION

FIG 5606

14 gauge on tooth edge. 16 gauge on ends of back edge. 19 gauge on center on back edge.

Sizes. . . . . Feet	4	4½	5	5½	6	6½	7	7½	8
Without handles . each	$2.80	3.30	3.85	4.45	5.10	5.70	6.40	7.10	7.80

HOLLOW BACK SAW

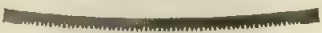


FIG. 5607.

TUTTLE TOOTH

ATKINS BRAND, 3¼ INCHES WIDE

Sizes . . . . . Feet	4	4½	5	5½	6	6½	7	7½	8
Tuttle Tooth, without handles..... .... each	$1.12	.26	1.40	.54	1.68	1.82	1 96	2.10	2.24

TUTTLE TOOTH

ATKINS BRAND, 3¾ INCHES WIDE

Sizes... . . . . Feet	4	4½	5	5½	6	6½	7	7½	8
13 or 14 gauge... . . . . each	$ .28	$1.44	$1.60	$1.76	$1.92	$2.08	$2.24	$2.40	$2.'6
14 x 16 or 13 x 15 gauge ..... "	1.44	1.62	1.80	1.98	2.16	2.34	2.52	2.70	2.88

BAY STATE CROSS-CUT SAWS

No. 205

FIG. 5608.

Length .....feet	4	4½	5	5½	6	6½	7	7½	8
List Price, 14x18 gauge, ea.	$2.00	$2.25	$2.50	$2.75	$3.00	$3.25	$3.50	$3.75	$4.00
" " 14x16 " "	1.84	2.07	2.30	2.52	2.76	2.99	3.22	3.45	3.68

NO. 210. HOLLOW BACK

FIG. 5609.

Length .....feet	4	4½	5	5½	6	6½	7	7½	8
List Price.....each	$1.12	1 26	1 40	1.54	1 68	1.82	1.96	2.10	2 24

No. 214

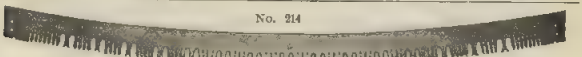


FIG 5610.

Length.....feet	4	4½	5	5½	6	6½	7	7½	8
List Price .....each	$1.50	1.70	1 90	2.10	2.30	2 50	2.70	2.90	3.10

No. 0214 same as No. 214 except that No. 0214 is 2 ga. taper.

ONE MAN CROSS-CUT SAWS

NO. 111. STRAIGHT GROUND

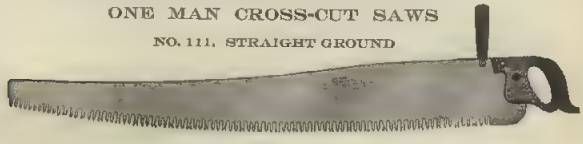


FIG. 5611.

Length.....feet	3	3½	4	4½	5	5½
List Price.....each	$2.25	2.60	3 00	3 35	3 70	4.10

NO. 232. STRAIGHT GROUND

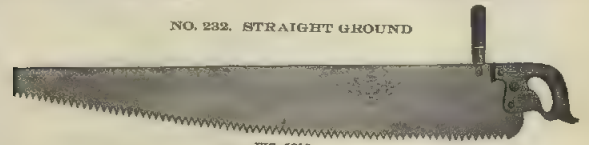


FIG 5612.

Length .....feet	3	3½	4	4½	5	5½
List Price.....each	$2.25	2.60	3.00	3.35	3.70	4.10

CRESCENT-GROUND CROSS-CUT SAWS

No. 13

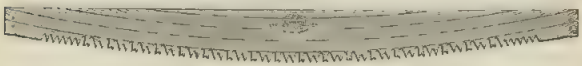


FIG. 5599.

No. 22

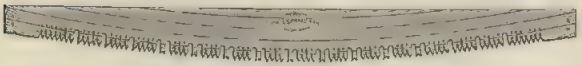


FIG. 5600.

No. 77

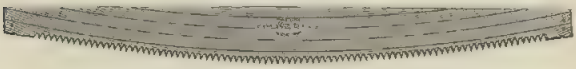


FIG. 5601.

CRESCENT-GROUND FELLING SAWS

No. 315

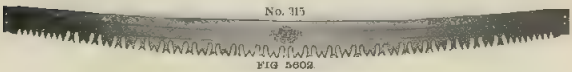


FIG 5602

No. 325

FIG 5603

LIST PRICES CROSS-CUT AND FELLING SAWS

4	feet long.	List price.				each,	$2.40
4½	"	"	"	"		"	2.90
5	"	"	"	"		"	3.50
5½	"	"	"	"		"	4.10
6	"	"	"	"		"	4.80
6½	"	"	"	"		"	5.60
7	"	"	"	"		"	6.30
7½	"	"	"	"		"	7.10
8	"	"	"	"		"	8.00

We guarantee that the Crescent-Ground Saw will cut ten per cent. more timber, same labor being used, than any other brand of saws made in the United States.

The Simonds Cross-Cut Saw, Crescent-Ground, is now universally known. For many years in use, no saw has ever been returned because our warranty, as above printed, was not fulfilled.

ONE MAN CROSS-CUT SAWS

TUTTLE TOOTH

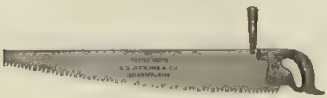


FIG. 5613.

V TOOTH

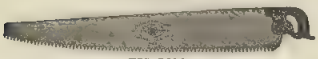


FIG. 5614.

Length..... feet	3	3½	4	4½	5	5½	6
List price, either style, each	$1.80	2.10	2.40	2.70	3.00	3.30	3.60

ATKINS DRAG SAWS

MILL TOOTH

FIG. 5615.

TUTTLE TOOTH

FIG. 5616

Tapered 10-inch butt, 8-inch point, 8 gauge, list										per foot,	$1.60
"	10	"	"	8	"	"	9	"	"	"	"	1.55
"	9	"	"	7	"	"	8	"	"	"	"	1.50
"	9	"	"	7	"	"	9	"	"	"	"	1.45
"	8	"	"	6	"	"	10	"	"	"	"	1.25
"	8	"	"	6	"	"	11	"	"	"	"	1.20
"	7	"	"	5	"	"	10	"	"	"	"	1.15
"	7	"	"	5	"	"	11	"	"	"	"	1.10
"	7⅛	"	"	4⅛	"	"	10	"	"	"	"	1.15
"	7⅛	"	"	4⅛	"	"	11	"	"	"	"	1.10
Equal width, 8-inch, 10 gauge										"	"	1.45
"	"	9	"	10	"					"	"	1.55
"	"	10	"	10	"					"	"	1.75
"	"	12	"	10	"					"	"	2.00

Saws over seven feet long, use Lance Tooth List.

4-COLUMN PATENT SECTIONAL STEEL TOWERS

THESE LIST PRICES ARE FOR BOTH ROUND COLUMN AND STRUCTURAL STEEL TOWERS

CLASS O.

Height in Feet.	Capacities of Tanks that Towers will Support.	Shipping Weight Tower Complete.	Cost of Tower Complete.	Shipping Weight of Frost Proofing Material	Cost of Frost Proofing for Top and Bottom of Tank.	Estimated Cost of Foundations.
15		1,599 lbs.	$74 25			$15 00
27	1,500	2,113 "	114 90			15 00
39	gallons	2,713 "	158 50	200 lbs.	$10 25	15 00
51	and	3,418 "	208 65			15 00
63	less	4,185 "	262 30			15 00
75		5,000 "	318 25			15 00

CLASS A.

15		2,226 lbs.	$95 75			$20 00
27	2,500	2,933 "	145 90			20 00
39	to	3,714 "	198 60	275 lbs.	$14 25	20 00
51	3,000	4,595 "	255 15			20 00
63	gallons	5,436 "	315 45			20 00
75		6,361 "	378 25			20 00

CLASS B.

15		3,301 lbs.	$130 80			$25 00
27	4,000	4,317 "	198 25			25 00
39	to	5,419 "	268 15	425 lbs.	$23 20	25 00
51	6,000	6,630 "	344 95			25 00
63	gallons	7,929 "	435 75			25 00
75		9,363 "	507 80			25 00

CLASS C.

15		4,935 lbs.	$180 75			$33 50
27	7,000	6,414 "	272 80			33 50
39	to	8,000 "	371 10	850 lbs.	$40 25	33 50
51	10,000	9,712 "	475 90			33 50
63	gallons	11,548 "	586 25			33 50
75		13,507 "	704 80			33 50

CLASS D.

15		6,721 lbs.	$233 80			$40 00
27	12,000	8,443 "	350 85			40 00
39	to	10,281 "	475 40			40 00
51	15,000	12,238 "	607 20	1,075 lbs.	$51 45	40 00
63	gallons	14,318 "	746 25			40 00
75		16,518 "	902 55			40 00

CLASS E.

15		8,640 lbs.	$297 65			$50 00
27	15,000	10,898 "	436 45			50 00
39	to	13,165 "	583 25			50 00
51	20,000	15,652 "	738 55	1,350 lbs	$65 00	50 00
63	gallons	18,298 "	901 85			50 00
75		21,085 "	1,069 40			50 00

CLASS F.

15		10,515 lbs.	$384 25			$60 00
27	20,000	13,083 "	525 55			60 00
39	to	15,767 "	701 35			60 00
51	30,000	18,677 "	882 15	1,575 lbs.	$79 80	60 00
63	gallons	21,805 "	1,071 90			60 00
75		24,989 "	1,268 50			60 00

CLASS G.

15		16,228 lbs.	$474 15			$75 00
27	30,000	19,384 "	678 05			75 00
39	to	22,723 "	891 85			75 00
51	40,000	26,213 "	1,115 05	2,000 lbs.	$98 20	75 00
63	gallons	29,949 "	1,348 60			75 00
75		33,850 "	1,592 15			75 00

The heights above given are standard, and are from the ground or grade line to the bottom of the tank. Note the shipping weights given. We guarantee them to be correct, except our Angle Column or Structural Steel Towers weigh a little more.

The prices of Towers include the Foundation at top of Tower for Tank, with extension for Octagonal Walk-way with Iron Hand Rail and with Iron Ladder, as shown in cut on opposite page.

These Towers take a very low rate of freight. Write for delivered prices.

We also build these Towers in heights of 87 and 100 feet when desired.

PLAIN CONICAL COVERS

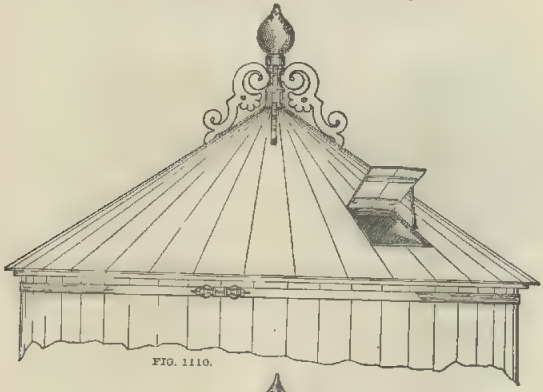


FIG. 1110.

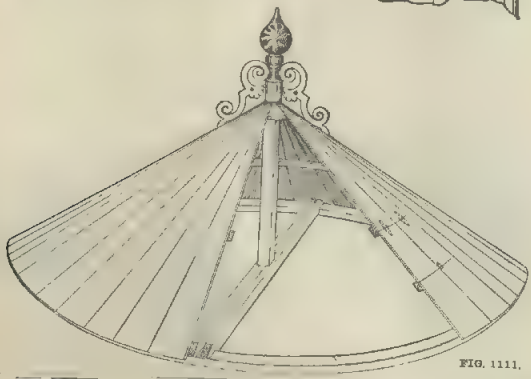


FIG. 1111.

Cover for Tank, 6 feet 6 inches diameter	Weight.	Price.
" " " 8 " 0 " "	200 lbs.	12.00
" " " 10 " 0 " "	300 "	17.00
" " " 12 " 6 " "	450 "	23.00
" " " 14 " 0 " "	775 "	31.50
" " " 16 " 0 " "	1050 "	40.00
" " " 18 " 0 " "	1150 "	50.00
" " " 19 " 6 " "	1500 "	62.00
" " " 22 " 0 " "	1800 "	76.00
" " " 24 " 0 " "	2000 "	95.00
" " " 26 " 0 " "	2300 "	120.00
" " " 28 " 0 " "	2800 "	150.00
" " " 30 " 0 " "	3500 "	186.00
	4500 "	235.00

We will quote on Shingles for these covers, too, when so desired.

IMPROVED VALVE, OUTLET PIPE, SPOUT AND FIXTURES

IN USE ON MANY OF THE LEADING ROADS OF THE UNITED STATES

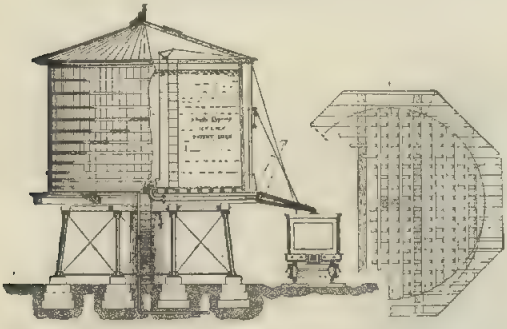


FIG. 1112.

Why is Cypress the best wood for Tanks?
Because it does not warp or twist when exposed to the weather.

IMPROVED VALVE, OUTLET PIPE, GALVANIZED SPOUT, AND FIXTURES.

FIG. 1113.

The above cut represents our Improved Tank Fixtures and Tank Outlet Valve, which are strictly frost proof. We furnish these in four sizes—4, 6, 7 and 8 inch.

	4 in.	6 in.	7 in.	8 in.
Fixtures, for 10 to 14 foot diameter Tank	$45 00	$60 00	$70 00	.....
" " 16 " "	55 00	65 00	75 00	$90 00
" " 20 " "	.....	70 00	80 00	95 00
" " 24 " "	.....	75 00	85 00	100 00
" " 30 " "	.....	82 50	92 50	110 00

Tank Outlet Valves (as per cut); also Tank Float Valves.

For 1 inch pipe	$2 25	For 4 inch pipe	8 00
" 1¼ " "	2 50	" 5 " "	10 00
" 1½ " "	3 00	" 6 " "	12 00
" 2 " "	4 00	" 7 " "	15 00
" 2½ " "	5 00	" 8 " "	18 00
" 3 " "	6 00		

These valves are not threaded unless ordered that way.

Why is Cypress the best wood for Tanks?
Because it has not the knots and defects found in White Pine and other woods.

TANKS AND TOWERS

WATER WORKS FOR COUNTRY HOMES

FIG. 1114.

We supply these tank and tower outfits without a windmill where some other power is to be used for filling the tank.

They are ornamental as well as substantial and durable.

No country home, however humble, is complete without a Caldwell tank and tower, which gives full benefit of city water service to house, grounds, stock and for fire protection. First cost small, no expense for repairs. Outfit strong, durable, handsome; stands any storm, lasting a life time.

Outfit illustrated is combined tank, tower and windmill, suitable for house of five or six rooms, a few head of stock and sprinkling lawns. Tank holds up to 3000 gallons.

This cut represents our 63-foot Steel Tower and 30,000 Gallons Cypress Tank.

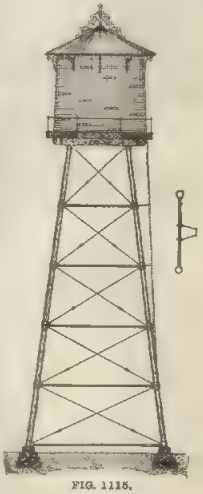


FIG. 1115.

SECTIONAL ROUND COLUMN STEEL TOWERS

This cut illustrates our 4-column patent steel tower, which we build in sections, suitable to support tanks of dimensions up to and including 20 feet in diameter and of 40,000 gallons capacity.

These towers are strong, durable and attractive in appearance, and cost much less than steel or iron towers of any other design, and, when durability and strength are considered, they are much cheaper than any all-wooden structures.

This style of tower is used extensively in connection with automatic sprinkler plants, for protection against fire in mills, factories and other large buildings, as whenever a large storage of water is kept on hand, elevated and ready for use, it greatly reduces the fire risk and consequently lessens the cost of insurance. They are also largely used by gardeners and florists for irrigation, and also for water supplies for small villages and private grounds.

See prices of towers and estimated cost of foundations on opposite page.

CONNECTING WIRE

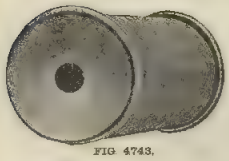


FIG. 4743.

In 2 lb. spools, containing about 500 feet,
..... per lb., $0.60

A pure copper insulating wire used for connecting the exploders where several charges are to be fired simultaneously.

LEADING WIRE

USED IN CONNECTION WITH BLASTING MACHINES AND ELECTRICAL EXPLODERS

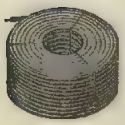


FIG. 4744.

In coils of 500 feet ..... per coil, $5.00

A heavily insulated pure copper wire.

Weight per coil about 7 lbs.

SAFETY FUSE

FIG. 4746.

	Per 1000 ft.
Cotton for all dry work; case contains 12000 feet and weighs 125 lbs.	$6.20
Single Tape, suitable for damp, but not wet work; case contains 6000 feet and weighs 125 lbs.	9.30
Double Tape, suitable for wet work; case contains 6000 feet and weighs 130 lbs.	10.30
Triple Tape, can be used with a certainty and safety under water; case contains 6000 feet and weighs 138 lbs.	12.70
Gutta-percha, absolutely waterproof, case contains 6000 feet and weighs 122 lbs.	16.00
Anchor Brand, white double countered, finished same as Gutta-percha; suitable for wet work; case contains 6000 feet and weighs 122 lbs.	12.00
Beaver Brand, for dry or slightly damp work; case contains 6000 feet and weighs 116 lbs.	8.50

Safety fuse is made in lengths of 50 feet. 100 feet in a coil (2 lengths).

COMMON STRAIGHT CHARGERS

FIG. 4746.

Made of tin or zinc. Furnished in straight or taper pattern

BLASTING BARRELS

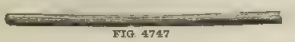


FIG. 4747

Wrought iron, natural finish; $1\frac{5}{32}$ inch outside diameter; $\frac{1}{4}$ inch hole; length 6 feet; weight per dozen about 20 lbs. ..... list per dozen, $6.00

ELECTRIC BLASTING APPARATUS.

VICTOR ELECTRIC FUSES.

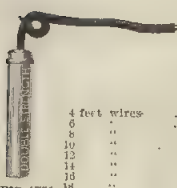


FIG. 4751.

Improved Water-Proof Insulation.

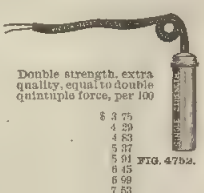


FIG. 4752.

	Single strength, ordinary quality, equal to quintuple force, per 100	Double strength, extra quality, equal to double quintuple force, per 100
4 feet wires	$ 3 00	$ 3 75
6 "	3 50	4 29
8 "	4 08	4 83
10 "	4 62	5 37
12 "	5 16	5 91
14 "	5 70	6 45
16 "	6 21	6 99
18 "	6 78	7 53
20 "	7 32	8 07
22 "	8 32	9 07
24 "	9 32	10 07
26 "	10 32	11 07
28 "	11 32	12 07
30 "	13 32	13 07

Made in three sizes.

FIG 4753.

BLASTING MACHINES.

"PULL UP" BLASTING MACHINE.

No. 3 will fire 20 to 30 holes.....Price, $25 00
No. 4 will fire 40 to 50 holes.....Price, 50 00
No. 5 will fire 75 to 100 holes.....Price, 75 00

UNITED STATES STANDARD BLASTING MACHINE.

Price

No. 3 will fire 1 to 20 holes.....$25 00
No. 4 will fire 40 to 50 holes..... 50 00

Made in two sizes.

FIG. 4754.

The above machines are the strongest and most powerful ever made for Electric Blasting. They are especially adapted for submarine blasting, large railroad quarrying and mining works.

One size only.

FIG 4755

VICTOR BLASTING MACHINE.

Price

No. 1 will fire 5 to 8 holes.....$15 00

Weight only 15 pounds; adapted for prospecting, stump blasting, well sinking, etc.

PRICE LIST.

Victor Leading Wire Reel	$1 00
Connecting Wire Holder	2 00
Battery Testing Lamp, with Stand Complete	3 50
" " without Stand	1 75
Connecting Wire (on 2-lb. Spools)	per lb.
Leading Wire (in large coils)	per lb
Leading Wire (measured to exact length ordered)	1c per ft.
Insulating Tape (half-lb. packages)	$1 50 per lb

BLACK POWDER

SURE SHOT

FOR SHOT GUNS AND RIFLES

FG. Duck Size

FG.

FFG.

FFFG.

Size	Duck FG.	FG.	FFG.	FFFG.
½ lb. Canisters	$	$	$	$
1 " "				
6¼ " Kegs				
12½ " "				
25 " "				

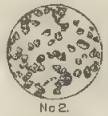
No 5

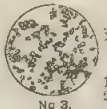
No. 7.

CHOKE BORE AND TRAP SHOOTING

Nos	5	7
1 lb. Canisters	$	$
6¼ " Kegs		
12½ " "		
25 " "		

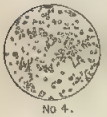
No 1


No 2.


No 3.

DUCKLING

Nos	1	2	3
1 lb. Canisters	$	$	$
6¼ " Kegs			
12½ " "			
25 " "			


No 4.

No.6.

No 8.

ESSEX—FANCY SPORTING POWDER

Nos	4	6	8
1 lb. Canisters	$		

BLASTING POWDER

FFFF.

FFF.

FF.

F.

C.

CC.

CCC

Sizes FFFF., FFF., FF., F., C., CC., CCC., in 25 lb. metal kegs per keg, $.....

Powder will not be packed with other goods. Express companies will not handle black powder.

DUPONT DYNAMITE

Hercules

FIG. 4748.

FIG 4749.

Atlas

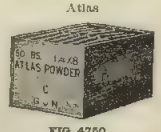


FIG. 4750.

SHOWING METHOD OF PREPARING A CARTRIDGE

Hercules and Atlas Powder is packed in paper Cartridges of a double thickness, protected by a coating of Paraffin. The standard size of Cartridge is 1¼ inches Diameter by 8 inches long, but for special conditions, Cartridges of any convenient size are manufactured.

These Cartridges are put up regularly in wooden cases holding fifty pounds. When so desired by customers, a special packing is furnished by which five cartons, thoroughly protected with paraffin, each holding ten pounds, are enclosed in a wooden case, or half cases, containing twenty-five pounds each. For Dynamite packed in this manner, there will be an extra charge of ¼ cent per pound.

Can furnish Dynamite (all numbers) in sticks as per following weights and measurements at regular price, with the exception of Hercules and Atlas Gelatine, in ⅞x8 inch sticks on which there will be an extra charge of ½ cent per pound.

Sizes of Stick, Inches	⅞x8	1x8	1¼x8	1¼x8	1⅝x8	1¾x8	2x8
Weight per Stick, ounces	4¼	6¼	8⅛	8	12½	16	20
			(Standard Size)				

HERCULES DYNAMITE

No. 1	—60% Nitroglycerine	per lb.,	$0.32
" 2 SS	—50% "	"	.29
" 2 S	—45% "	"	.27½
" 2	—40% "	"	.26
" 2C	—33⅓ "	"	.25
" 3B	—27% "	"	.23½
" 4B	—20% "	"	.22
" 2B	—35% "	"	.25½
" 3	—30% "	"	.24½

ATLAS DYNAMITE

No. B	—60% Nitroglycerine	per lb.,	$0.32
" A	—50% "	"	.29
" C	—45% "	"	.27½
" C	—40% "	"	.26
" D	—33% "	"	.25
" E	—27% "	"	.23½
" E	—20% "	"	.22
" K	—35% "	"	.25½

HERCULES AND ATLAS GELATINE

Hercules and Atlas Gelatine is an explosive of great strength, having general characteristic, similar to Hercules and Atlas Powder, to which it corresponds in effectiveness, grade for grades

The special quality of Hercules and Atlas Gelatine by which it differs from all ordinary Dynamite is an entire freedom from objectionable fumes on explosion. This quality makes its use a necessity in all close work, such as Tunnels, Shafts and Mines where the ventilation is not perfect.

It is put up for shipment in packages similar to those used for Hercules and Atlas Powder.

HERCULES GELATINE

No. GEL	—1 —80%	per lb.,	$0.32
" GEL	—2 SS —50%	"	.29
" GEL	—2 S —45%	"	.27½
" GEL	—2 —40%	"	.26

ATLAS GELATINE

No. GEL	—B —60%	per lb.,	$0.32
" GEL	—B —50%	"	.29
" GEL	—C —45%	"	.27½
" GEL	—C —40%	"	.26

HERCULES AMMONIA DYNAMITE

WILL DO THE WORK IN MOST CASES THE SAME AS NITROGLYCERINE DYNAMITE

It should be stored in a thoroughly dry place, because it is more susceptible to dampness than other Dynamite, and if stored in a damp place will absorb considerable moisture that will damage this Powder. Extra strong caps should be used (nothing weaker than a quadruple force), as it is somewhat harder to explode than Nitroglycerine Dynamite. It is used in exactly the same manner as any other Dynamite.

No. 1A	—Straight,	60%	Ammonia	per lb.,	$0.31½
" 2AA	— "	50%	"	" "	.28½
" 3AAA	— "	40%	"	" "	.25½
" 4AAAA	— "	33%	"	" "	.24½

Packed in 25 or 50 lb. Cases

We positively cannot ship Dynamite with Hardware or other goods.

This class of goods can only be shipped by rail.

STAPLE GAS BRACKETS

FIG. 4273.

		List Price
No. 100.	6-inch Gilt.....each,	$0.70
	Mottled Copper.... "	.80
No. 101.	8-inch Gilt..... "	.80
	Mottled Copper.... "	.90

FIG. 4275.

		List Price
No. 102.	Gilt ....each,	$0.80
	Mottled Copper.... "	.90

FIG. 4277.

		List Price
No. 103.	Swing Gilt ... .each,	$1.20
	Mottled Copper .. "	1.36

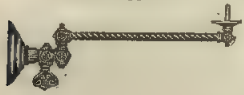


FIG. 4278.

		List Price
No. 104.	Gilt .....each,	$0.98
	Mottled Copper.... "	1.06

FIG. 4280.

		List Price
No. 105.	Gilt .....each,	$1.50
	Mottled Copper.... "	1.70

FIG. 4274.

		List Price
No. 106.	Gilt .....each,	$2.20
	Mottled Copper.. . "	2.46

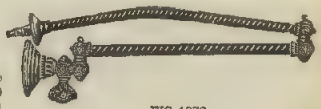


FIG. 4276.

		List Price
No. 107.	(Universal) Gilt...each,	$2.20
	Mottled Copper.. . "	2.46

FIG. 4279.

		List Price
No. 108.	(Universal) Gilt...each,	$3.10
	Mottled Copper.... "	3.40

FIG. 4281.

		List Price
No. 109.	Gilt ....each,	$2.00
	Polished ..... "	2.40
	Mottled Copper.... "	2.60

GAS PENDANTS

One Arm

FIG. 4282.

Two Arm

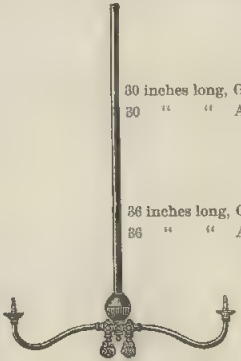


FIG. 4283.

ONE ARM

	List Price, each
30 inches long, Gilt Finish	$1 00
30 " " Antique Copper Finish	1.20

TWO ARMS

	List Price, each
36 inches long, Gilt Finish	$1.80
36 " " Antique Copper Finish	2.40

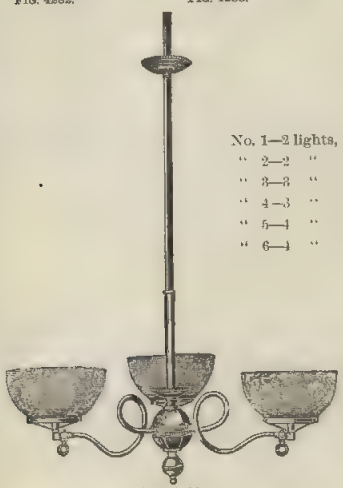


FIG. 4284.

	List Price, each
No. 1—2 lights, Gilt Finish	$3.00
" 2—2 " Antique Copper Finish	3.50
" 3—3 " Gilt Finish	3.50
" 4—3 " Antique Copper Finish	4.00
" 5—4 " Gilt Finish	5.00
" 6—4 " Antique Copper Finish	5.50

GAS AND ELECTRIC FIXTURES

No. 1

FIG 4285.

No. 2

FIG 4286.

No. 3

FIG. 4287.

No. 1—Pendant. Length 34 inches. For 6 inch ball. Rich Gilt Finish. Combination gas and electric, one each. List price ..... each, $5.00
No. 2—Pendant. Length 36 inches. Rich Gilt Finish. Combination gas and electric, one each. List price ..... each, 2.60
No. 3—Hall Lamp. Beveled plate. Polished brass. For gas. List price ..... each, 8.30

No. 4

FIG. 4288.

No. 5

FIG. 4289.

No. 6

FIG. 4290.

No. 4—Hall Harp. Polished brass, for gas. List price each, $2.50
No. 5—Combination gas and electric. Extends 5 inches. Spreads 7 inches. Rich Gilt Finish. List ..... each, 2.60
No. 6—Combination gas and electric. Rich Gilt Finish. List ..... each, 1.10

GAS AND ELECTRIC FIXTURES

FIG. 4291.

HARP LAMP

POLISHED BRASS

FOR GAS

List price ....each, $4 00

COMBINATION

Length 36 inches.

Spread 20 inches.

Rich gilt and venetian finish.

Combination gas and electric.

FIG 4292.

No. 2—2 gas and 2 electric lights .... each, $9 80
" 3—3 " " 3 " " ..... " 11.50

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Ice Cream Freezers

These Freezers have Virginia White Cedar Pails, bound with Electric-Welded Wire Hoops, not stapled on, but imbedded in grooves in the staves. Will not break. Cannot fall off. The cans are made of best quality heavy tin plate, double thickness at top, and secured by a strong wire, which gives them stiffness. They will not dent in use. The tops are drawn out of a single piece. The inside metal parts are heavily plated with pure block tin, and are perfectly hygienic. The outside castings are heavily galvanized, and will not rust. Fitted with New Cross-Bar Lock and Re-enforced Cross Bar.

"Snow Ball" Freezers.

Three Motions.

The "Snow-Ball" has three motions. The can revolves from right to left, the outer beater revolves from left to right, the two wood scrapers removing the frozen cream from the inner surface of the can, and throwing it to the center. The inner beater turns in an opposite direction to that of the outer beater, mixes the frozen cream from the sides with the unfrozen cream in the center, and throws all back to the sides to be again frozen and removed by the scrapers.

Quarts	1	2	3	4	6	8	10	12
With Crank, each	$2.50	3.20	3.80	4.40	5.60	7.20	9.30	11.70
With Fly-Wheel, each	....	4.20	4.80	5.40	7.20	9.10	12.10	16.00

"Double Quick" Freezers.

Two Motions.

The "Double Quick," as its name indicates, freezes in double-quick time a smooth, velvety cream. The "Double Quick" has two motions. The can turns from left to right, while the dasher turns from right to left. The wood scrapers on the dasher remove the cream from the inner surface of the can as fast as frozen. The centrifugal motion of the dasher throws the cream from the center to circumference, while the can, revolving in an opposite direction, throws the frozen cream back to the center as fast as removed by the wood scrapers. The cream is thus kept moving until the whole becomes a smooth, well-beaten, frozen mass.

Quarts	1	2	3	4	6	8	10	12
With Crank, each	$2.40	2.80	3.30	4.00	5.10	6.50	8.40	10.00
With Fly-Wheel, each	..	3.80	4.30	5.00	6.70	8.40	11.20	14.30

"Frost King" Freezers.

Single Motion.

The "Frost King" is a Single-Motion Freezer. The can only revolves, while the dasher remains stationary. The ice space is of a suitable size, making it a very economical freezer. The mechanism is very simple, and it is easy to operate. The wood scrapers on the dasher pressing automatically against the inner surface of the revolving can remove the frozen cream and throw it towards the center, where the floats on the dasher mix it with the unfrozen cream, and return it to the sides to be re-frozen. In about seven minutes it will produce a rich and evenly frozen cream

Quarts	1	2	3	4	6	8	10	12
With Crank, each	$2.20	2.60	3.00	3.60	4.60	5.90	7.60	9.00
With Fly-Wheel, each	..	3.60	4.00	4.60	6.10	7.80	8.40	13.30

Ice Cream Freezers

Dana "Peerless" Freezers.

One Motion.

This Freezer has fewer parts than any other freezer and only one motion. The working parts are all enclosed and no gears on can top. The one motion principle makes the crank turning easy. The cream freezes smooth, fine and firm in about three minutes, and turns as easily when the cream is frozen as at the start.

Quarts	1	2	3	4	6	8	10	12
With Crank, each	$2.50	3.20	3.80	4.40	5.60	7.20	9.30	11.70
With Fly-Wheel, each	4.70	5.30	5.90	7.10	10.20	12.30	14.70	

Dana "Polar" Freezers.

One Motion.

All gearing enclosed separate from freezing apparatus. Can't get out of order. Oiled safely. Easy to run. Stationary dasher gives the fine, smooth quality of cream as Dana Peerless. Tubs, extra heavy, full size. Wrapped in heavy hardware paper, attractively labeled. The gear frame is fastened to the tub by a positive lock and permits the gear frame to be removed by the handle only. Material throughout same as that used in Dana Peerless.

Quarts	1	2	3	4	6	8	10	12
With Crank, each	$2.40	2.80	3.30	4.00	5.10	6.50	8.40	10.00
With Fly-Wheel, each	4.30	4.80	5.50	6.60	9.50	11.40	13.00	

Dana "Frezo" Freezers.

Tubs made of best quality of lumber and cans of strongest and best coated tin-plate. Dasher is of an improved type, double scrapers fastened same as in Dana Peerless. Gear frame heavy and strong, turned by gears fastened on can top—the best freezer of this type. Rim on bottom of gear frame projects down and covers gears so that no salt nor ice can get between the cogs or in can.

Quarts	1	2	3	4	6	8	10	12
With Crank, each	$2.20	2.60	3.00	3.60	4.60	5.00	7.60	9.00
With Fly-Wheel, each		4.10	4.50	5.10	6.10	8.80	10.60	12.00

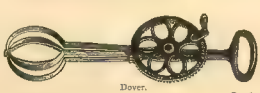
Egg Beaters

Surprise.

Sensible.

	Per dozen
Surprise Egg Beater. Retinned Wire	$0.60
Sensible Egg Whip. Tinned Wire Wrapped Handle. 9 inches	1.25

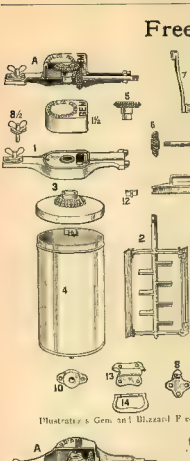
Star.


Dover.

	Per dozen
Star Egg Beater. Wood Handle. For Eggs or Cream Worked with one hand	$3.00
Dover Egg Beater. Family Size. Japanned Wheel and Handle	2.35

One Dozen in a Box.

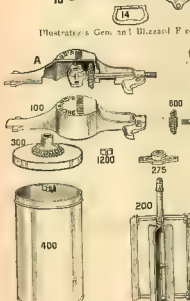
Freezer Parts for Repairs



Illustrations Gem and Blizzard Freezers

Gem—Name of Part. Quarts	1	2	3	4	6	8	10	12	14
Pail only, with handle....	$0.40	.48	.56	.68	.84	1.08	1.44	1.80	2.12
Pail, with Nos. 8, 9 and 10	.48	.56	.68	.80	1.00	1.28	1.72	2.08	2.40
A Cross-bar, with parts....	.36	.40	.48	.56	.68	.96	1.28	1.52	1.80
1 " only, no parts..	.16	.20	.24	.28	.36	.48	.64	.76	.92
1½ Cap, for cross-bar.....	.12	.12	.12	.16	.20	.24	.32	.40	.48
2 Dasher, including scrapers..	.20	.24	.28	.36	.48	.60	.88	1.04	1.20
3 Lid—iron	.16	.20	.24	.28	.36	.48	.64	.72	.80
3½ " —tin, for packing-can...	.20	.24	.28	.32	.40	.48	.56	.64	.72
4 Can, only	.24	.28	.30	.44	.56	.72	.96	1.08	1.20
5 Upper Gear	.12	.12	.12	.12	.16	.16	.16	.16	.16
6 Driving Gear.....	.08	.08	.08	.08	.12	.12	.12	.12	.12
7 Crank	.12	.12	.12	.12	.16	.16	.20	.20	.20
7½ Crank shaft	.08	.08	.08	.08	.12	.12	.12	.12	.12
8 Hook for top of pail.....	.04	.04	.04	.08	.08	.08	.12	.12	.12
8½ Knob or Catch.....	.08	.08	.08	.08	.08	.08	.08	.08	.08
9 Sidepiece, crank side.....	.04	.04	.04	.08	.08	.08	.12	.12	.12
10 Centerpiece,for bottom of pail	.04	.04	.04	.04	.04	.04	.04	.04	.04
11½ Wood Scraper.....	.08	.08	.08	.08	.08	.12	.12	.12	.12
11¾ Upper Hinge for scraper..	.04	.04	.04	.04	.04	.04	.04	.04	.04
11¾ Lower " " " ..	.04	.04	.04	.04	.04	.04	.04	.04	.04
12 Carrier for can.....	.04	.04	.04	.04	.04	.04	.04	.04	.04
13 Plate for side handle of pail	. .	. .	. .	. .	. .	. .	.08	.08	.08
14 Handle " " "	. .	. .	. .	. .	. .	. .	.08	.08	.08

Blizzard Name of Part Quarts	1	2	3	4	6	8	10	12	14
Pail only, with handle	$0.40	.48	.56	.68	.84	1.08	1.44	1.80	2.12
Pail, with Nos. 8, 9 and 10	.48	.56	.68	.80	1.00	1.28	1.72	2.08	2.40
A Cross-bar, with parts.....	.24	.28	.30	.44	.52	.68	.88	.96	1.08
1 " only, no parts ..	.16	.20	.24	.28	.36	.48	.64	.80	.92
2 Dasher, including scrapers..	.20	.24	.28	.36	.48	.60	.88	1.04	1.20
3 Lid—iron	.16	.20	.24	.28	.36	.48	.64	.72	.80
3½ " —tin, for packing-can...	.20	.24	.28	.32	.40	.48	.56	.64	.72
4 Can, only	.24	.28	.30	.44	.56	.72	.96	1.08	1.20
6 Driving Gear.....	.08	.08	.08	.08	.12	.12	.12	.12	.12
7 Crank	.12	.12	.12	.12	.16	.16	.20	.20	.20
7½ Crank-shaft	.08	.08	.08	.08	.12	.12	.12	.12	.12
8 Hook for top of pail.....	.04	.04	.04	.08	.08	.08	.12	.12	.12
8½ Knob or Catch.....	.08	.08	.08	.08	.08	.08	.08	.08	.08
9 Sidepiece, crank side.....	.04	.04	.04	.08	.08	.08	.12	.12	.12
10 Centerpiece,for bottom of pail	.04	.04	.04	.04	.04	.04	.04	.04	.04
11¼ Wood Scraper.....	.08	.08	.08	.08	.08	.12	.12	.12	.12
11¾ Upper Hinge for scraper....	.04	.04	.04	.04	.04	.04	.04	.04	.04
11¾ Lower " " " ..	.04	.04	.04	.04	.04	.04	.04	.04	.04
12 Carrier for can.....	.04	.04	.04	.04	.04	.04	.04	.04	.04
13 Plate for side handle..	. .	. .	. .	. .	. .	. .	.08	.08	.08
14 Handle " " "	. .	. .	. .	. .	. .	. .	.08	.08	.08



Illustrations Lightning Freezer.

Lightning—Name of Part. Quarts	1	2	3	4	6	8	10	12	14
Pail only, with handle...	$0.40	.48	.56	.68	.84	1.08	1.44	1.80	2.08
Pail, with 800, 900, 1000	.48	.56	.68	.80	1.00	1.28	1.72	2.08	2.88
A Top-plate, with parts .	.30	.40	.48	.56	.68	.96	1.28	1.52	1.80
100 " no parts.	.28	.32	.36	.44	.56	.72	.96	1.16	1.40
200 Dashes, complete...	.20	.24	.28	.36	.48	.60	.88	1.04	1.20
275 Dasher-holder	.08	.08	.12	.12	.16	.16	.16	.16	.16
300 Lid—iron	.16	.20	.24	.28	.36	.48	.64	.72	.80
350 " —for packing-can...	.20	.24	.28	.32	.40	.48	.56	.64	.72
400 Can only	.24	.28	.30	.44	.56	.72	.96	1.08	1.20
600 Driving Gear ..	.08	.08	.08	.08	.12	.12	.12	.12	.12
700 Crank	.12	.12	.12	.12	.16	.16	.20	.20	.20
750 Crank-shaft ..	.08	.08	.08	.08	.12	.12	.12	.12	.12
800 Lock-plate, crank side.....	.04	.04	.04	.08	.08	.08	.12	.12	.12
900 Hinge ear, opposite crank..	.04	.04	.04	.04	.04	.04	.04	.04	.04
1000 Centerpiece,for bottom of pail	.04	.04	.04	.04	.04	.04	.04	.04	.04
1120 Wood Scraper....	.08	.08	.08	.08	.08	.12	.12	.12	.12
1140 Upper Scraper-lug..	.04	.04	.04	.04	.04	.04	.04	.04	.04
1160 Lower Scraper-lug..	.04	.04	.04	.04	.04	.04	.04	.04	.04
1200 Carrier for can..	.04	.04	.04	.04	.04	.04	.04	.04	.04
1300 Plate for side handle	. .	. .	. .	. .	. .	. .	.08	.08	.08
1400 Handle " " .	. .	. .	. .	. .	. .	. .	.08	.08	.08

In ordering parts, be particular to give name and size of Freezer, name of part wanted, corresponding to Illustration, and number and letter on broken part.

The minimum charge on any invoice for repairs only will be 10 cents.

Ice Cream Freezers

The "Lightning" Freezers.

The Lightning Freezers are easy running, quick freezing, economical, convenient, and they give good practical results. The inside parts are all heavily coated with block tin and the outside parts thoroughly galvanized. The pails are pine with electric welded hoops, and guaranteed not to fall off or break

Size	1 qt	2 qt	3 qt	4 qt.	6 qt.	8 qt.	10 qt.	12 qt.	14 qt.
Each . .	$2 40	2 80	3 30	4.00	5.10	6.50	8.40	10.00	11.50

The "Gem" Freezers.

The Gem is the only double-action Freezer of reputation made to-day. All imitations of it have failed, and the Gem is the only one that has stood the test of practical use. The Gem has been the model to other makers for all that was best in an ice cream freezer, and has been imitated more than any freezer made.

Size	1 qt	2 qt	3 qt	4 qt.	6 qt.	8 qt.	10 qt.	12 qt.	14 qt.
Each .	$2 10	2 80	3 30	4.00	5 10	6.50	8.40	10.00	11.50

The "Blizzard" Freezers.

Pre-eminently the best low-priced Freezers on the market. The lower price is due only to the simpler construction of the operating mechanism, being single action—that is, the can only revolves. It will more than hold its own in comparison with any freezer made in those practical features of easy running, economy and convenience in use and satisfactory results

Size .	1 qt	2 qt	3 qt.	4 qt.	6 qt.	8 qt.	10 qt.	12 qt.	14 qt.
Each	$2.20	2.50	3 00	3.60	4.60	5.90	7.60	9.00	10.40

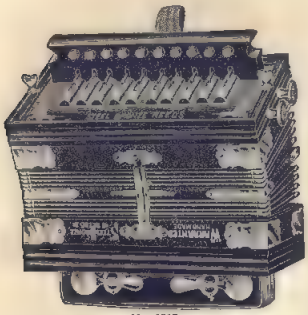
The "American" Twin Freezers.

In the American Twin Freezer the can is divided in two parts by a vertical partition, which projects above top of can and bears against the can lid, so that during freezing nothing can pass from one side of can to the other. The dasher has a central shaft which fits in the groove of the partition of can. This dasher carries two sets of scrapers, one set fitting in one side of can and the other set in opposite side. Obviously the can cannot be turned as in old style freezers, because of the partition. It is, there, fore, swung forwards and backwards, and this movement is produced by a rocking motion of the crank.

Freezes two flavors of ice cream or an ice or sherbert and ice cream at one and the same time, in one Freezer.

Size..	2 qt	3 qt.	4 qt.	6 qt.	8 qt.	10 qt.	12 qt.	15 qt.	20 qt.
Each .	$3.50	4.10	5.00	6.40	8.00	10.00	12.00	16.00	20 00

ACCORDEONS



No. 9817.

Size, 6x11¼ Inches.

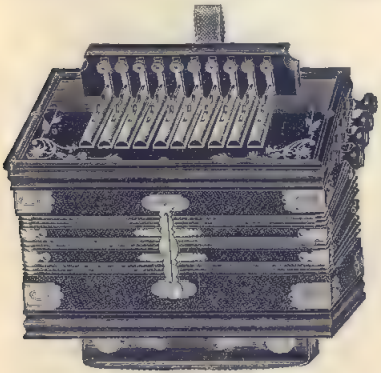
Ebonized Panels and Mouldings, Triple Bellows, Metal Thumb-screw Top Fasteners and Corner Protectors.

No. 9817 10 Long Pearl Tipped Keys, 3 Sets Hand-made Steel Bronze Reeds, 3 Stops, 2 Long Mode. Bass Keys....Each $10.50

No. 91817 Same as above, but **Genuine Steel Reeds**.....Each $13.50

No. 9818 Size 6¼x11¾ Walnut Finish Panels, Black Mouldings, Thumb-screw Top Fasteners, Triple Bellows, Nickel Corner Protectors and Clasps, 10 Medium Length Keys with Pearl Buttons, 4 Sets of Steel Bronze Reeds, **Octave Tuning**, 4 Wooden Stops, 2 Long Model Bass Keys..Each $12.25

No. 91818 Same as above, but **Genuine Steel Reeds**..Each $16.50



No. 9823.

Size, 7⅝x12½ Inches.

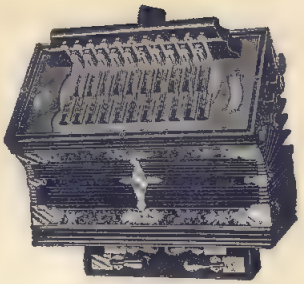
Ebonized Case, Triple Bellows, with Keratol Covered Frame Metal Corner Protectors, TUNED IN OCTAVES (One set tuned in thirds)

No. 9823 10 Long Pearl-tipped Keys, 4 Wooden Stops 4 Sets of Reeds... . . . . Each $13.25

Fluted Mouldings, Imitation Mahogany, Panel Mahogany, Sunken Open Action Keyboard, Pearl Button Keys, Nickel Bellows Protectors, Nickel Corners and Clasps, Double Bellows.

No. 9419 19 Keys, 4 Stops, 4 Sets of Reeds, Size 14½x7 inches ..... Each $23.50

No. 9421 Same as No. 9419, with 21 Keys, 4 Sets of Reeds Size 15x7½..... ...Each $25.75

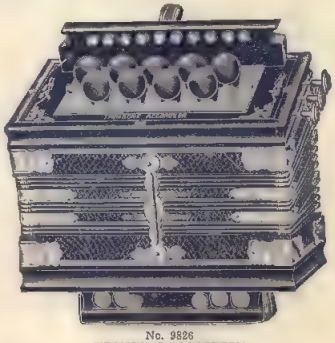


No. 91009

Size 6¼x11¼ Inches.

Oak Finish Panels, Ebonized Mouldings, Open Keyboard, Nickel Keys, Bellows Protectors, Nickel Corners and Clasps, Double Bellows.

No. 91009 10 Keys, 4 Stops, 4 Sets of Extra Brond, Warranted Hand-made, Steel Bronze Reeds.....Each $9.25



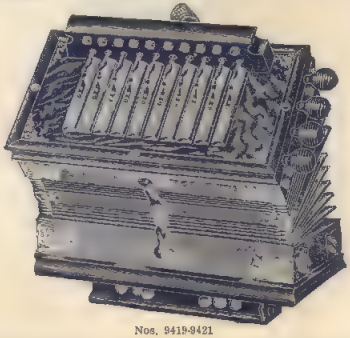
No. 9826

TROMBONE ACCORDEON.

Size 6½x11 Inches.

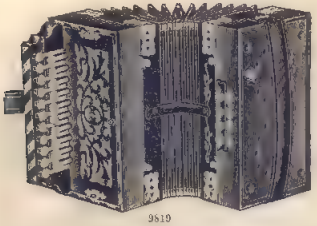
Ebonized Panels and Mouldings, Triple Bellows with Nickel Corner Protectors and Clasps. Nine Double Bellows, Nickel Corners and Clasps, 8 Funnel-Shaped Bugles on Top

No. 9826 10 Round White Keys, 3 Stops, 3 Sets of Wiener Reeds . . . . . .Each $11.50



Nos. 9419-9421

VIENNA ACCORDEONS



9819

Size 5¼x9¾. Rosewood Finish Case, scroll top, 11 substantial bellows folds, "ACME ADJUSTABLE CASE AND BELLOWS FRAME TIGHTENERS," leather clasps, 10 long keys, pearl buttons, 2 sets of reeds, 4 basses.

No. 9824 ..... Each $10 25

Same as above, but with black frame and bellows, and genuine steel reeds

No 9825..... Each $12.25

Size 5½x8¾. Case Mahogany Finish, both top and bottom, blue edges, fretwork panel, 13 belows-folds, corner protectors and leather clasps, 10 long white keys with pearl buttons, 2 sets of Wiener reeds, 4 basses and equipped with "ACME ADJUSTABLE CASE AND BELLOWS-FRAME TIGHTENERS"

No 9819..... Each $12 25

Size 5¼x10¾. Rosewood Finish Case, white panels, fancy fretwork top, 15 bellows-folds with corner protectors and leather clasps, 10 long keys with white pearl finger-buttons, "ACME PATENT ADJUSTABLE CASE AND BELLOWS FRAME TIGHTENERS," 2 sets of hand-made steel bronze reeds, 4 basses.

No 9820..... Each $13 50

Same as No 9820, but has ebonized case, white panels, and genuine steel reeds.

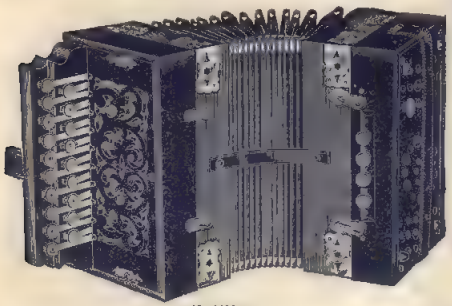
No. 9821..... Each $15 25

Size 5½x9¾. Ebonized Case, gilt ornamentation, fretwork panel, 13 bellows-folds with corner-protectors and clasps 10 long black and gilt keys with white pearl finger-buttons, "ACME PATENT ADJUSTABLE CASE AND BELLOWS FRAME TIGHTENERS," 2 sets of Vienna reeds, 4 basses.

No 9827 ..... Each $12.25

Size 7¼x9¾. Rosewood Finish Case, sunken panel top, nickel moulding about inner edges of frame, extra quality hand-made Keratol-covered bellows metal bellows-protectors and leather clasps, 10 white round keys, 2 basses, 2 sets of reeds.

No. 9828. ..... Each $16.50



No 9836½.

Size 6x10¾ inches.

Ebonized Case and Mouldings, "ACME PATENT ADJUSTABLE CASE AND BELLOWS FRAME TIGHTENERS," leatherette covered bellows-frame, 13 folds, metal corner protectors and clasps, 19 long pea.l-tipped keys, 4 sets of reeds, 4 basses

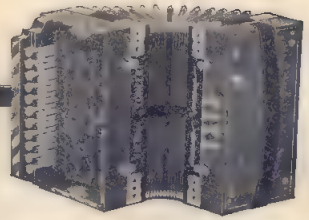
No. 9836½..... Each $14 75

19 long pearl-tipped keys, 4 sets of reeds, 8 basses

No. 9836¾..... Each $17 75

21 long pearl-tipped keys, 4 sets of genuine steel reeds, 15 folds, 8 basses.

No. 9836¾..... Each $25.75



9837

Size 6x10¾. Rosewood Finish Case with fretwork panels, corded colored wood edges, leatherette covered bellows-frame, 13 folds, metal corner-protectors, leather clasps, 19 long keys, pearl finger-buttons, "ACME PATENT ADJUSTABLE CASE AND BELLOWS-FRAME TIGHTENERS," 8 basses, 4 sets of Bell metal reeds.

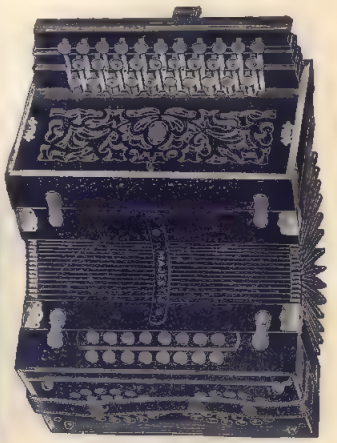
No 9836. ..... Each $20.50

Same as No. 9836, but 21 keys and 14 folds in bellows.

No. 9837..... Each $21.50

Same as No. 9837, but plain black case and bellows, 16 folds, 12 basses

No. 9838..... Each $24.75



No 9855

Size 7x12 inches.

Vienna Model, ebonized case, and fretwork panels, "ACME PATENT ADJUSTABLE CASE AND BELLOWS FRAME TIGHTENERS," metal corner-protectors, leather clasps, and 16 heavy Keratol bellows-folds, 31 long keys with pearl finger-buttons, 6 sets of genuine steel reeds, 16 basses.

No. 9855..... Each $54.00

Our musical pages have been compiled with best of attention and goods illustrated and quoted therein are the very best sellers in these respective articles, therefore, in view of our careful consideration and rock bottom prices, we most urgently request that you eagerly solicit orders for same

All orders filled same day received. No delay whatsoever.

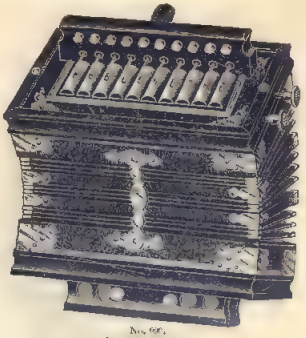
ACCORDEONS

No. 9001
Size 4⅛x9¾ inches.

No. 9001 Ebonized case and mouldings, double bellows, corners and clasps. 10 keys, 2 stops, 1 set of reeds ..... each, $3 50

Size 4⅜x10½ inches.

No. 9005 Ebonized case and mouldings, open action, double bellows, corners and clasps. 10 keys, 2 stops, 1 set of reeds ..... each, $4 00

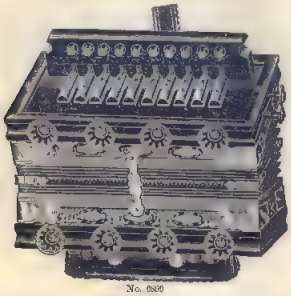


No. 9007
Size 4⅝x10½ inches.

No. 9006 Ebonized panels and mouldings, open keyboard, nickel keys, corners and clasps, double bellows. 10 keys, 2 stops, 1 set of reeds ..... each, $4 50

Size 5x10½ inches.

No. 9001 Ebonized case and panels, open keyboard with nickel moulding, double bellows nickeled corners, clasps and bellows protection. 10 keys, 2 stops, 2 sets of reeds ..... each, $5 35

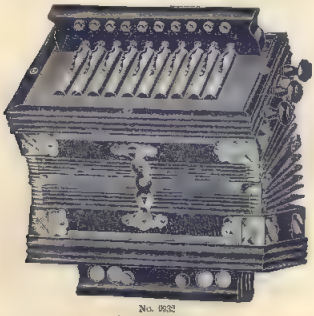


No. 9026
Size 5⅛x10¼ inches.

No. 9026 Ebonized case and mouldings, open keyboard, double bellows, nickel corners and clasps, eight green and gilt bugles. 10 keys, 2 stops, 1 set of reeds ..... each, $5 25

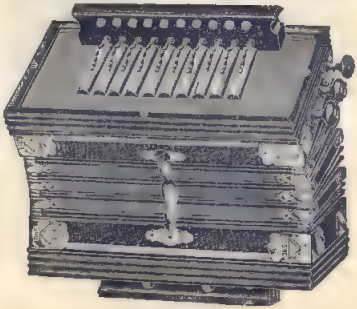
No. 9029—Size 5⅜x10¼ inches.

No. 9029 Mouldings, panels, bellows and frames handsomely colored and attractively finished in solid rosewood, base and grape, nickel corners and clasps, nickel bellows protectors, bone button keys, quadruple bellows. 10 keys, 2 stops, 2 sets reeds ..... each, $6 50



No. 9032
Size 10x5½ inches.

No. 9032 Ebonized mouldings and key board, attractively finished, blue panels with gilt ornamentation, nickel bellows protectors, nickel corners and clasps, double bellows. 10 keys, 3 stops, 3 sets of reeds ..... each, $7 25



No. 9036—Size 12x5 inches.

No. 9036 Ebonized mouldings and keyboard, attractively finished, blue panels, bone button nickel keys, nickel bellows protectors, corners and clasps, quadruple bellows. 10 keys, 3 stops, 3 sets of reeds ..... each, $8 25

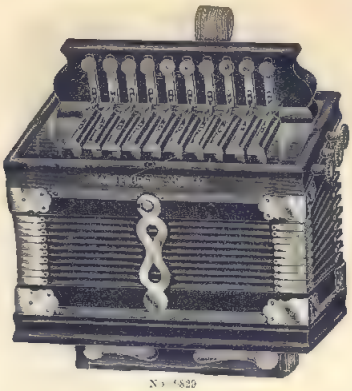
ACCORDEONS

Nos. 91119-91121

Size 12x7 Inches.

Ebonized Mouldings and Panels, Open Action Keyboard, Ornamented with Gilt Designs, Nickel Button Keys, Bellows Protectors, Corners and Clasps, Triple Bellows, with Nickel Corner Protectors.

No. 91119 19 Keys, 4 Sets of Reeds, Each $12.75
No. 91121 21 Keys, 2 Stops, 4 Sets of Reeds, Each 13.75



No. 9829

Size 7x11¾ Inches.

Ebonized Case and Panels, Open Keyboard, 10 broad Bellows-folds with Brass Protectors, Cloth Covered Bellows. TUNED IN OCTAVES, producing a quality and volume of tone not found in the average accordeon.

No. 9829 10 Long Pattern Keys with Pearl Finger-buttons, 2 long Bass Keys, 3 Sets of Extra Broad Reeds, Each $24.00

No. 9406

Size 14x7 Inches.

Ebonized Mouldings with Nickel Cornice, Highly Polished Panel, Inlaid with Pearl and German Silver, Pearl Button Keys, Open Action Keyboard so arranged that springs may be replaced without taking the instrument apart, Nickel Corners and Clasps, Triple Bellows with Bellows Protectors.

No. 9406 10 Keys, 2 Stops, 2 Sets of Reeds, Each. $15.75

No. 9408

Size 12x6¾ Inches.

Ebonized Mouldings, Keyboard and Panels, Panels Decorated with Silver Ornaments, "Quick Repair" Open Keyboard, which facilitates replacing springs without taking the instrument apart, Nickel Bellows Protectors, Corners and Clasps.

No. 9408 10 Keys, 4 Stops, 4 Sets of Reeds, Each.....$15.75

THE "PITTSBURGH" COMPOUND PRESSURE AND VACUUM GAGES

SPRINGS OF SOLID DRAWN TUBE

FIG. 775.

These Gages for indicating either pressure or vacuum, are graduated for pressure in pounds per square inch, and for vacuum in inches of mercury column, fifteen pounds pressure being equal to about thirty inches of vacuum. If a pressure exceeding fifteen pounds is required it should be stated in ordering.

PRICES INCLUDING COCK

Size.	Iron Case, Japanned	Iron Case, N. P. Ring	Brass Case	N. P. Case
3½ inch Dial.....each	$10.00	$10.18	$12.00	$12.75
4½ " " ..... "	12.00	12.20	14.00	15.00
5½ " " ..... "	14.00	14.25	16.00	17.25
6 " " ..... "	16.00	16.50	20.00	21.50
6¾ " " ..... "	20.00	20.60	25.00	27.00
8½ " " ..... "	30.00	30.75	40.00	42.50
10 " " ..... "	40.00	41.00	50.00	53.00
12 " " ..... "	60.00	61.50	80.00	84.00

Always use a syphon, so that nothing but water will enter the gage.

THE "PITTSBURGH" HYDRAULIC GAGES

FIG 776.

Our Hydraulic Gages are made with special steel tube for high pressures, and are accurately and carefully tested.

When ordering state maximum pressure required, and if dial is to show pressure in tons on ram, give exact diameter of ram.

PRICES WITHOUT COCKS

Size	Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case
5 inch Dial . . . . each	$30.00	$30.50	$35.00	$36.00
6 " " . . . . "	35.00	35.50	40.00	41.50
6¾ " " . . . . "	50.00	50.60	60.00	62.00
8½ " " . . . . "	70.00	70.75	80.00	82.50
10 " " . . . . "	90.00	91.00	100.00	103.00
12 " " . . . . "	110.00	111.50	125.00	129.00

Maximum Hands, $5.00 each. Hydraulic Check Valves and Cocks extra.

No extra charge for marking tons on Ram on Dials.

THE "PITTSBURGH" COMBINATION WATER PRESSURE GAGES

SPRINGS OF SOLID DRAWN TUBE

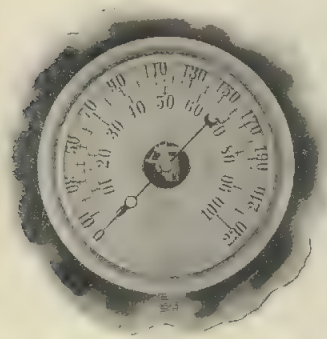


FIG. 777.

These Gages are especially adapted for Water Works, Pumping Stations, etc., for indicating the pressure of water in pounds per square inch and the corresponding height of water column. To raise a column of mercury 2.04 inches, or a column of water 27.67 inches requires one pound pressure. Always state, in ordering, the maximum pressure to be carried, or the maximum height of water.

PRICES INCLUDING COCK

Size	Iron Case, Japanned	Iron Case, N. P. Ring	Brass Case	N. P. Case
5½ inch Dial ..... each	$14.00	$14.25	$16.00	$17.25
6 " " ..... "	16.00	16.50	20.00	21.50
6¾ " " ..... "	20.00	20.60	25.00	27.00
8½ " " ..... "	30.00	30.75	40.00	42.50
10 " " ..... "	40.00	41.00	50.00	53.00
12 " " ..... "	60.00	61.50	80.00	84.00

THE "PITTSBURGH" PYROMETER STEAM GAGES

NOT ILLUSTRATED

SPRINGS OF SOLID DRAWN TUBE

For indicating pressure of steam in pounds per square inch, and corresponding degrees of heat.

PRICES INCLUDING COCK

Size	Iron Case, Japanned	Iron Case, N. P. Ring	Brass Case	N. P. Case
5½ inch Dial ..... each	$14.00	$14.25	$16.00	$17.25
6 " " ..... "	16.00	16.50	20.00	21.50
6¾ " " ..... "	20.00	20.60	25.00	27.00
8½ " " ..... "	30.00	30.75	40.00	42.50
10 " " ..... "	40.00	41.00	50.00	53.00
12 " " ..... "	60.00	61.50	80.00	84.00

In ordering state maximum pressure or temperature required.
A syphon is indispensable with these Gages.

THE "PITTSBURGH" STANDARD TEST GAGES

SPRINGS MADE OF SOLID DRAWN SEAMLESS TUBE

FIG 778.

Our Standard Test Gages are made with the greatest of care and with the best material and workmanship possible in the present state of the art.

Each Gage is most carefully adjusted, tested and graduated by our mercury column and sealed in one pound marks.

For accuracy, sensitiveness and workmanship there are no better gages made.

PRICES INCLUDING COCK

Size			Brass Cases	N. P. Case
3	inch Dial	each	$14.00	$14.60
3½	" "	"	14.00	14.75
4½	" "	"	16.00	17.00
5½	" "	"	20.00	21.25
6	" "	"	25.00	26.50
6¾	" "	"	30.00	32.00
8½	" "	"	40.00	42.50
10	" "	"	50.00	53.00

FIG. 779.

GAGE HAND PULLER

Our Gage Hand Puller is a valuable little tool for taking off gage hands. It is very useful for parties using many gages.

Price, $1.50 Each.

HAY CARRIERS

No. 33

Fig. 9225A

No. 34

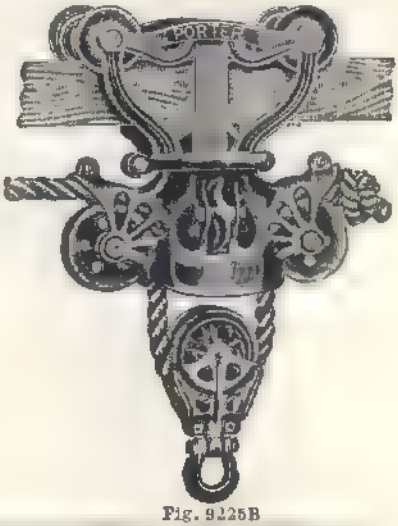


Fig. 9225B

Price, No. 33, Meadow King, for Columbian Steel Track	each	7.00
" " 34, Porter for Wood Track	"	7.00

SLING CARRIER

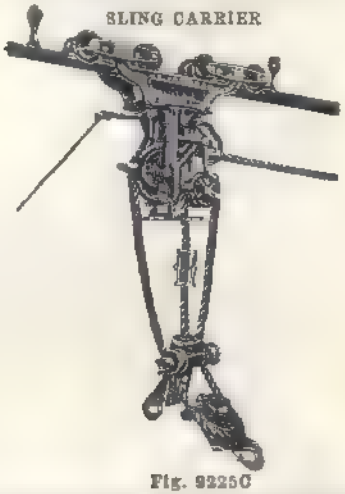


Fig. 9225C

DOUBLE HARPOON FORK

Fig. 9225D

NO 22 SLING CARRIER WITH EIGHT WHEELS

Price No. 22 Sling Carrier, Right Angle Pulleys, Drop Frame Lock, for Columbian or R. R. Steel Track, Triple Hoist		13.00

DOUBLE HARPOON HAY FORKS

Price, Double Harpoon Hay Forks, Short or Long Heads	each	1.60
" " " " " Extra Long Heads	"	2.00

HAY FORK
PULLEYS, TRACK AND ACCESSORIES

No. 23 No. 22 No 29 No. 26 No. 27

Fig. 9226A

Fig. 9226B

Fig. 9226C

Fig. 9226D

Fig. 9226E

HAY FORK PULLEYS

Price, No. 23, Cast Frame, 6 inch Wood Wheel	per dozen	3	20
" " 22, Knot Passing, Steel Frame, 6 inch Iron Wheel	"	4	50
" " 29, Knot Passing, Steel Frame, 6 inch Wood Wheel	"	4	00
" " 26, Wood Frame, Steel Yoke, 6 inch Wheel	"	4	00
" " 27, Cast Frame, 6 inch Iron Wheel	"	3	20

COLUMBIAN STEEL TRACK

Fig 9226F

Price, Columbian Steel Track, Double Bead	per foot		20

HANGERS, BRACKETS, ETC.*

Price, No 120, Steel Track Hangers with Eye	per dozen	1	40
" " N74, " " " " Hook	"	1	40
" Split Track Hangers	"	1	50
" 5/8 Floor Hooks	"	1	20
" 3/4 " " "	"	1	40
" Straight Hanging Hooks, 10 inch	"	1	10
" " " 12	"	1	10
" " " 14	"	1	20
" " " 16	"	1	30
" Jointed "	"	2	00
" No. 12, Rafter Brackets	"		60
" " 13, Ridge Pole Brackets	"		60
" Swivel Rope Hitches	"	3	20
" Steel Rafter Grapples	"	10	00

* See illustrations on opposite page.

HAY CARRIER ACCESSORIES

No. 120
TRACK HANGER

Fig. 9227A

No. N74
TRACK HANGER

Fig. 9227B

SPLIT
TRACK HANGER

Fig 9227C

SPLIT
TRACK HANGER

Fig. 9227D

FLOOR HOOK

Fig. 9227E

SWIVEL ROPE HITCH

Fig. 9227F

STRAIGHT HANGING HOOK

Fig. 9227G

JOINTED HANGING HOOK

Fig. 9227H

RAFTER GRAPPLE

Fig. 9227J

No. 13
RIDGE POLE BRACKET

Fig. 9227K

No 12 RAFTER BRACKET

Fig. 9227L

Floor Hooks made in $\frac{5}{8}$ inch and $\frac{3}{4}$ inch sizes.
Straight Hanging Hooks made in varying lengths.
No. 13 Ridge Pole Bracket, made regularly to 2 inch Ridge Pole, but can be furnished with 4 inch opening if specially ordered.
See price list, opposite page.

HAY FORK HANDLES, ETC.

STRAIGHT HAY FORK

Fig. 9223A

LONG BENT MANURE

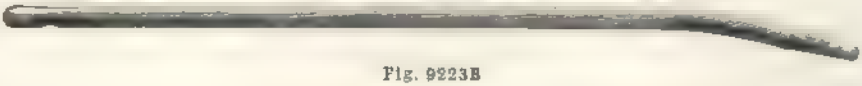


Fig. 9223B

GARDEN RAKE

Fig. 9223C

LONG SHOVEL

Fig. 9223D

FORK, RAKE AND HOE HANDLES

Length				4	4½	5	5½	6
Price, Straight Hay Fork Handles	X Grade, per dozen			1 55	1 65	1 90	2 15	2 50
" Bent	X	"	"	1 95	2 10	2 40	2 70	3 10
" " Manure	X	"			2 20	2 65	3 15	
" Garden Rake	X	"						2 15
" Mortar Hoe	X	"						2 15
" Garden Hoe	X				1 50			

LONG SHOVEL AND SPADE HANDLES

Price, Long Shovel Handles	X Grade	per dozen		3 00
" Spade	X	"		2 50

FERRULES AND D TOPS

FERRULES

Fig. 9223E

D TOP

Fig. 9223F

Description		Packed	Wood	Iron
Hay Fork Ferrules	per dozen	01	2 50	
Manure Fork Ferrules	"	01	2 50	
D Tops Malleable Iron for Fork or Shovel Handles				1 50

TOY SAD IRONS

NO. 922

Polished and Nickel Plated, Detachable Hardwood Handle. Weight, 14 ounces each.

No. **922** . Per dozen $2.50
Half dozen in a Box, with Stands.

NO. 45

Polished and Nickel Plated, Detachable Hardwood Handle. Weight, 26 ounces each.

No. **45** . Per dozen $4.50
One in a Box, with Stands.

NO. 90

"Enterprise," Cold Handle, Double Pointed, Detachable Handle, Japanned Caps and Stretchers. Weight, 1⅝ pounds.

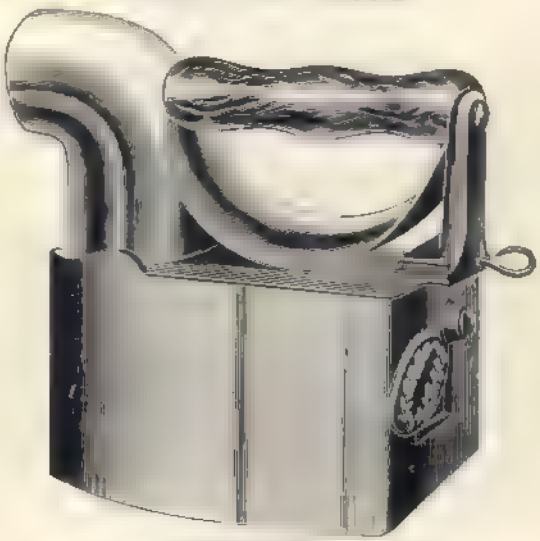
No. **90** Nickel Plated. Per doz. $5.00
One dozen in a Case, with Stands

TAILORS' GEESE

Weight, pounds		12	14	16	18
Size, inches		2¾x8⅝	2⅞x8⅞	3x9⅝	3¼x9⅞
Open Handles	Per pound	.11	.11	.11	.11
Closed "	" "	.11	.11	.11	.11

Weight, pounds		20	22	24
Size, inches		3⅛x10	3¼x10⅝	3¼x11
Open Handles	Per pound	.11	.11	.11
Closed "	" "	.11	.11	.11

CHARCOAL IRONS

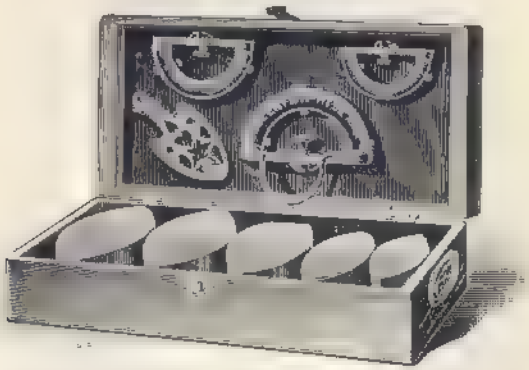


SELF-HEATING

No.	1	2	3	4
Weight each, pounds	4¼	6	6⅝	7
Polished Per dozen	$10.00	10.00	10.00	10.00

Six in a Case.

SAD IRONS



"ENTERPRISE" FAMILY OUTFITS OF IRONS

No. **330** Containing No. 82, 90 and Set No. E50 Irons, as illustrated and described $4 50

Six outfits in a Case.

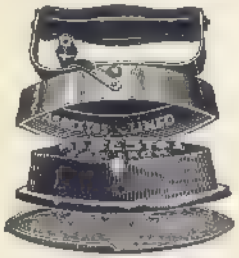
ASBESTOS SAD IRONS

NO. 10, ASBESTOS

Consists of one Hood, one Oval 1 lb. Core. Face of Core, 4¼ x 1⅞ inches. One Pressed Steel Stand.

No. **10 Tourist Iron** Per doz. $3 00

One in a Carton, twelve Cartons in a Case.

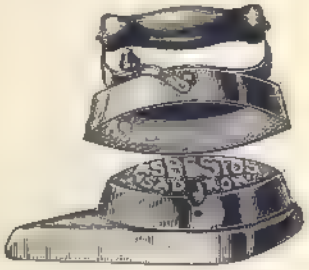


NO 40, ASBESTOS

Consists of one Hood, one Oval 3 lb. Core. Face of Core, 4¾ x 2½ inches. One Asbestos Covered Pressed Steel Stand.

No. **40 Sleeve Iron** Per doz. $6 00

One in a Carton, twelve Cartons in a Case.



NO. 50, ASBESTOS

Consists of one Hood, one Pointed 4 lb. Core. Face of Core, 6¾ x 2½ inches

No. **50 Flounce Iron** Per doz. $7.20

One in a Carton, six Cartons in a a Case.

NO. 60, ASBESTOS

Consists of one Hood, two Oval 3 lb. Cores. Face of Cores, 4¾ x 2⅛ inches. One Asbestos Covered Pressed Steel Stand.

No. **60 Shirt Waist Set** . . . Per dozen sets $9.00

One Set in a Wood Box, six Boxes in a Case.

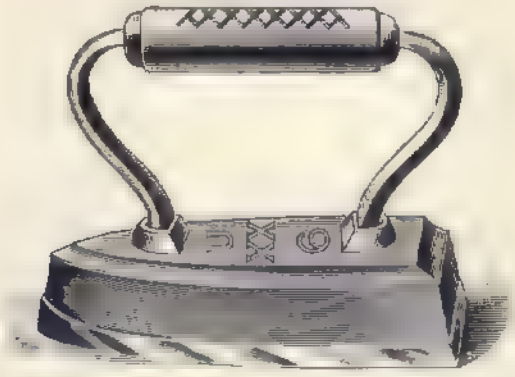
NO. 70, ASBESTOS

Consists of one Hood, two Oval Cores, weight with Hood attached, 7 lbs. One Oval Core, weight with Hood attached, 6 lbs. Face of Cores, 6½ x 3¼ inches. One Asbestos Covered Stand.

No. **70 Laundry Set** . . . Per dozen sets $21.00

One Set in a Wood Box, three or six Boxes in a Case.

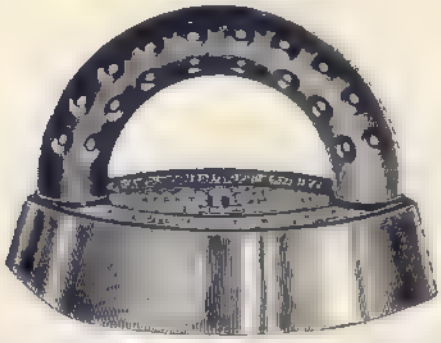
SAD IRONS



COMMON

Weight, pounds		4	5	6	7	8	9
Polished	Per pound	.08	.08	.08	.08	.08	.08

Weight, pounds		5	6	7	8
Nickel Plated	Per lb.	.08	.08	.08	.08

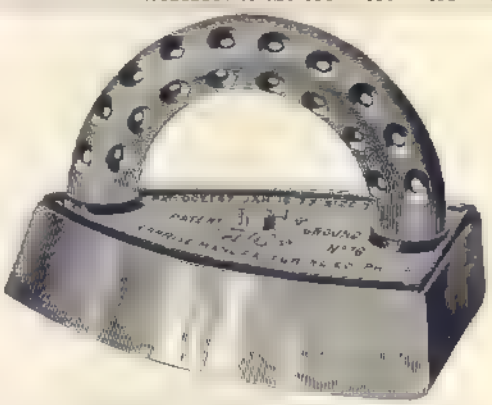


"ENTERPRISE" DOUBLE POINTED "STAR" IRONS

Stationary Handle, Japanned Handles and Caps. Made in three sizes—No. 1 with One End Rounded for Polishing, weight, 5 lbs.; No. 2 for General Use, weight, 5⅝ lbs.; No. 3 for Heavy Work, weight, 6⅛ lbs.

No. 75 Polished, either No. 1, 2 or 3 ..Per doz. $5.25

One or two dozen in a Case.

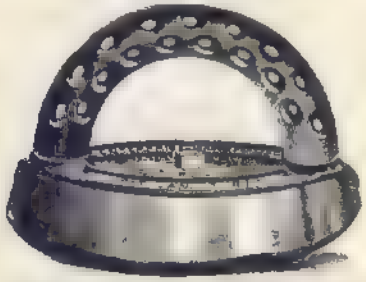


"ENTERPRISE" SQUARE BACK "STAR" IRONS

Stationary Handle, Japanned Handles and Caps. The Backs have Rounded Edges for Polishing. Made in three sizes—No. 1 for Polishing, weight, 4¾ lbs., No. 2 for General Use, weight, 5¾ lbs., No. 3 for Heavy Work, weight, 6⅛ lbs.

No. 76 Polished, either No. 1, 2 or 3 ..Per doz. $5.50

One or two dozen in a Case.

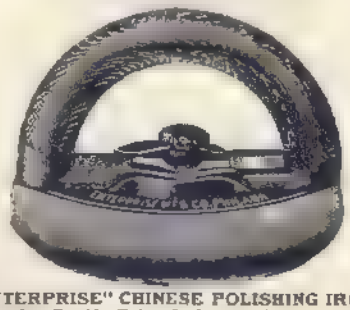


"ENTERPRISE" STAR POLISHING IRONS

Stationary Handle. Japanned Handles and Caps with All Round Edges.

No. 77 Polished, Weight 3 lbs. Per doz. $5.25

One, two or three dozen in a Case.



"ENTERPRISE" CHINESE POLISHING IRONS

Cold Handle, Double Pointed, Japanned Caps and Stretchers

No. 82 Nickel Plated, Weight 3 lbs. ..Per doz. $7.50
" **80** " " " 4⅛ " " " " 9.25

One, two or three dozen in a Case.

SAD IRONS

"WINCHESTER," NO. 450

Solid Iron, Full Nickel Plated on Top, Sides and Bottom; Nickel Plated Stretcher, Hardwood Handle, Nickel Plated Stand.

"Winchester" Three assorted sizes in a Set for Polishing, General Use and Heavy Work ...Per set $1.90

Six Sets in a Case, with Stands.

NO. E55 AND E50

"ENTERPRISE," "MRS. POTTS'," IRONS

Cold Handle. Double Pointed. Three Irons, one Handle and Stand constitute a Set. No. 1, with One End Rounded for Polishing, weight, 4 lbs. No. 2 for General Use, weight, 5⅛ lbs. No. 3 for Heavy Work, weight, 5¼ lbs. "Best" Handles with Forged Iron Stretchers.

No.		Per set.
E55	**Polished, with Japanned Caps**	$1.15
E55	" " **Tinned** "	1.15
E50	**Nickel Plated, with Japanned Caps**	1.20
E50	" " " **Tinned** "	1.20

One Set in a Package, Six Sets in a Case, with Stands.

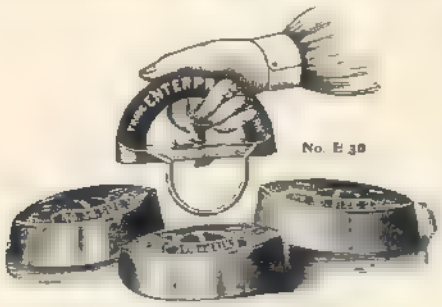
NO. E65 AND E60

"ENTERPRISE," "MRS. POTTS'" IRONS

Cold Handle. Square Back with Rounded Edges for Polishing. Three Irons, one Handle and one Stand constitute a Set. No. 1, for Polishing, weight, 4¼ lbs.; No. 2 for General Use, weight, 4⅞ lbs.; No. 3 for Heavy Work, weight, 5¼ lbs. "Best" Handles with Forged Iron Stretchers.

No.		Per set.
E65	**Polished, with Japanned Caps**	$1.35
E65	" " **Tinned** "	1.35
E60	**Nickel Plated, with Japanned Caps**	1.40
E60	" " " **Tinned** "	1.40

One Set in a Package; Six Sets in a Case, with Stands.



NO. E30, DOUBLE POINTED

NO. E40, SQUARE BACK

"ENTERPSISE" "MRS. POTTS'" NEW COLD HANDLE IRONS

These new Irons are Highly Polished and Nickel Plated, Tinned Caps or Top Plates. Each Set is equipped with the No. 200 Combination Handle described on page 751, thus despensing with a Stand.

		Per set
No. E30	Nickel Plated, with No. 200 Combination Handles	$1 75
" **E40**	" " " " 200 " "	1 90

One Set in a Package; Six Sets in a Case.

FINE SOLID STERLING SILVER SOUVENIR SPOONS

Manufactured by Watson Newell & Co. All Have French Gray Handles.

Quality Guaranteed 925/1000 Fine

Illustrations are exact size.

Prices Each.

GRAPE PATTERN
No. 4730 Gold lined bowl only, ea. $1.55

Our Prices Are Reasonably Low.

We Invite Comparison.

LILY OF THE VALLEY PATTERN
No. 4731 Gold lined bowl only, each, $1.55

ROSE PATTERN
No. 4732 Plain bowl. each, $1 70
No. 4733 Gold lined bowl .. " 1.70

These Goods Must be Seen to Appreciate Such Astounding Value for so Little a Cost.

These Are High-Grade Souvenir Spoons and Will Give Satisfaction.

COLUMBINE PATTERN
No. 4734 Plain bowl .....each, $1 70
No. 4735 Gold lined bowl..... " 1.70

POPPY PATTERN
No. 4736 Plain bowl.....each, $1 70
No. 4737 Gold lined bow... " 2.10

A large assortment of Souvenir Spoons are illustrated enabling you to easily making your selection.

HOLLY PATTERN
No. 4738 Plain bowl..... each, $1.70
No. 4739 Gold lined bowl..... " 2.10

EASTER LILY PATTERN
No. 4740 Plain bowl ..... each, $1.70
No. 4741 Gold lined bowl..... " 2.10

GRAPE PATTERN
No. 4742 Gold lined bowl only, each, $1 90

ROSE PATTERN
No. 4743 Gold lined bowl only, each, $1.90

DAISY PATTERN
No. 4744 Plain bowl .....each, $1.85
No. 4745 Gold lined bowl..... " 2.10

PINE CONE PATTERN
No. 4746 Plain bowl .....each, $1 95
No. 4747 Gold lined bowl . " 2 10

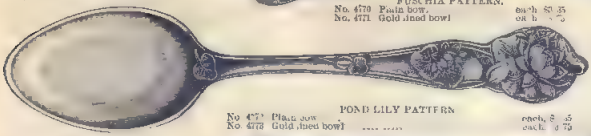
FINE SOLID STERLING SILVER SOUVENIR SPOONS

Quality Guaranteed 925–1000 Fine. Illustrations are Exact Size. Prices Each.
Manufactured by Watson, Newell & Co. All have French Gray Handles.

Why not co-operate with us in making this venture successful?

Exercise a little energy and results will be profitable.

FUSCHIA PATTERN.
No. 4770 Plain bowl, each $0.35
No. 4771 Gold lined bowl each [illegible]

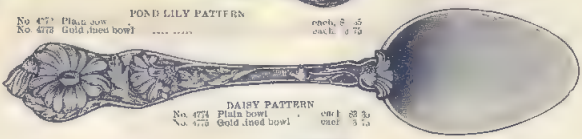


POND LILY PATTERN
No. 4772 Plain bowl each, $ .35
No. 4773 Gold lined bowl .... each, $ .75

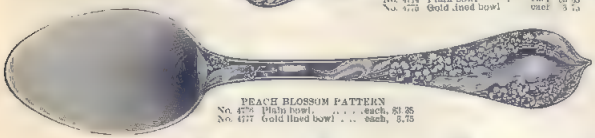
Our catalog is the most complete self-explanatory book printed. Patronage earnestly solicited.

Send us your orders for anything needed in our line.

Don't forget that we fill all orders same day received.



DAISY PATTERN
No. 4774 Plain bowl each $0.35
No. 4775 Gold lined bowl each $ .75



PEACH BLOSSOM PATTERN
No. 4776 Plain bowl, ... each, $0.35
No. 4777 Gold lined bowl . . . each, 0.75

We are exceptionally prompt in filling orders. Try us and same will be pleasing—you will become a permanent customer.

ROSE PATTERN
No. 472 Plain bow, each, $0.75
No. 473 Gold lined bowl each $ .75

GRAPE PATTERN
No. 4760 Plain bowl each, $ .70
No. 4761 Gold lined bow. each, $ .70

CHERRY PATTERN
No. 4762 Plain bow, ... each, $0.70
No. 4763 Gold lined bow. ..... each, $ .70

STRAWBERRY PATTERN
No. 4764 Plain bowl each $0.70
No. 4765 Gold lined bowl each $ .75

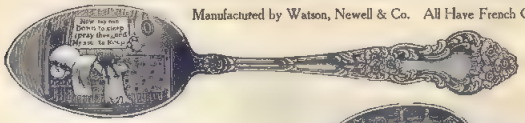
ORANGE PATTERN
No. 4766 Plain bowl each, $ .70
No. 4767 Gold lined bowl each, $ .75

PINE APPLE PATTERN
No. 4768 Plain bowl each, $ .70
No. 4769 Gold lined bowl, each, $ .70

FINE SOLID STERLING SILVER SOUVENIR SPOONS

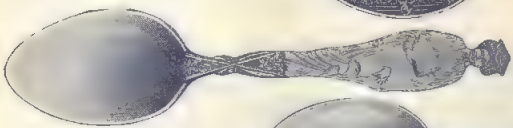
Guaranteed 925-1000 Fine. Prices Each. Illustrations are Exact Size.

Manufactured by Watson, Newell & Co. All Have French Gray Handles.



MEADOW ROSE PATTERN.
No. 4790 Etched bowl only ....each, $2.50

CHRISTMAS SPOON.
No. 4791 Oxidized struck bowl.....each, $2.50



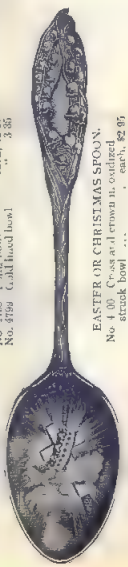
COLLEGE GIRL SPOON.
No. 4792 Plain bowl . each, $2.95
No. 4793 Gold lined bowl " $3.35

INDIAN SPOON.
No. 4794 Gold lined bowl only . each, $2.10

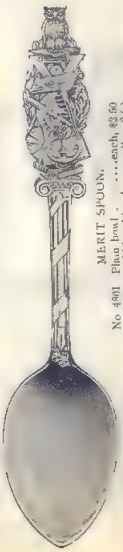
STATE SPOON.
Furnished for in any state desired.
No. 4795 Gold lined bowl only....each, $2.10

STATE SPOON.
Furnished for in any state desired.
No. 4796 Plain bowl . . each, $2.95
No. 4797 Gold lined bowl. . . . " 3.35

MONTH SPOON.
Furnished for in any month desired
No. 4798 Plain bowl . . each, $2.95
No. 4799 Gold lined bowl " 3.35



EASTER OR CHRISTMAS SPOON.
No. 4800 Cross and crown in oxidized struck bowl . . . each, $2.95



MERIT SPOON.
No. 4801 Plain bowl . . . .each, $2.50
No. 4802 Gold lined bowl " 2.85

EASTER OR CHRISTMAS SPOON.
No. 4803 Ascension in oxidized struck bowl. . . . . each, $3.75

EASTERN STAR FRATERNAL SPOON
No. 4804 Gold lined bowl only, each, $4.50

FINE SOLID STERLING SILVER SOUVENIR SPOONS

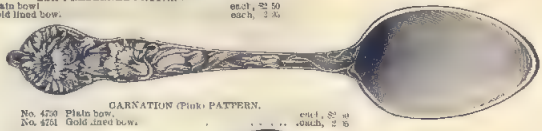
Quality Guaranteed 925-1000 Fine. Illustrations are Exact Size.
Prices Each. Manufactured by Watson, Newell & Co.

All have French Gray Handles.

ELK FRATERNAL PATTERN

No. 4748 Plain bowl . . . . . each, $2 50
No. 4749 Gold lined bow. . . . . each, 3 35

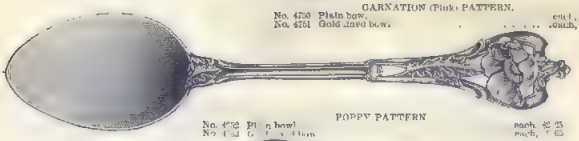
Satisfaction Guaranteed.



CARNATION (Pink) PATTERN.

No. 4750 Plain bow. . . . . each, $2 [illegible]
No. 4751 Gold lined bow. . . . . each, [illegible]

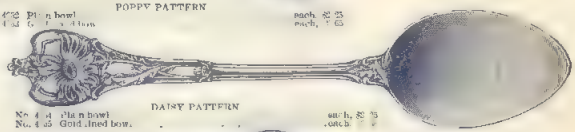
Honest Goods at lowest market prices.



POPPY PATTERN

No. 4752 Plain bowl . . . . . each, $2 [illegible]
No. 4753 Gold lined bow. . . . . each, [illegible]

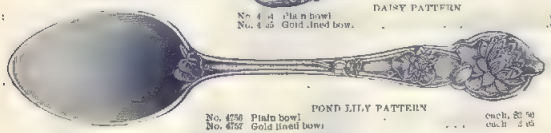
We Strive to Please.



DAISY PATTERN

No. 4[illegible] Plain bowl . . . . . each, $2 [illegible]
No. 4[illegible] Gold lined bow. . . . . each, [illegible]

Our Assortments are Exquisite None Better.

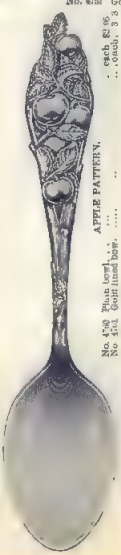


POND LILY PATTERN

No. 4756 Plain bowl . . . . . each, $2 50
No. 4757 Gold lined bowl . . . . . each, 3 35

GOLDEN HOD PATTERN

No. 4760 Plain bowl . . . . . each, $2 50
No. 4761 Gold lined bowl. . . . each, 3 35



APPLE PATTERN.

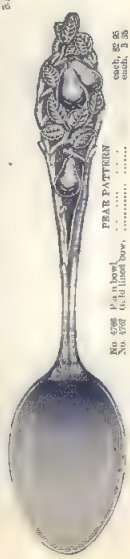
No. 4762 Plain bowl . . . . . each, $2 95
No. 4763 Gold lined bow. . . . . each, 3 35

SWEET CLOVER PATTERN

No. 4764 Plain bowl . . . . . each, $2 95
No. 4765 Gold lined bowl . . . . . each, 3 35

POPPY PATTERN.

No. 4774 Plain bowl . . . . . each, $2 95
No. 4775 Gold lined bowl . . . . . each, 3 35



PEAR PATTERN

No. 4766 Plain bowl . . . . . each, $2 95
No. 4767 Gold lined bow. . . . . each, 3 35

LILY OF THE VALLEY PATTERN

No. 4768 Plain bowl . . . . . each, $2 95
No. 4769 Gold lined bowl. . . . . each, 3 35

Full Size Illustrations

Valley Forge Pocket Knives

Per dozen.

No. 2676—Two Blades. Patent Stag, Brass Lined, 2⅝ inches, Spear Blade..... $8.00

Per dozen

No. 2012—Two Blades. Patent Stag, Brass Lined, 3 inches, Sh. Foot Blade..... $8.00

Per dozen

No. 2008—Two Blades. Patent Stag, Brass Lined, 3 inches, Sh Foot Blade . . $7 80

Per dozen

No. 2123—Two Blades. Patent Stag, Brass Lined, 3 inches, Spear Blade..... $9 30

Per dozen

No. 2228—Two Blades. Patent Stag, Brass Lined, 3 inches, Spear Blade..... $10.00

Per dozen.

No. 2423—Two Blades. Patent Stag, Brass Lined, 3 inches, Spear Blade..... $10.00

Per dozen.

No. 2358—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade..... $10.80

Half Dozen in a Box

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Illustrations reduced one-third

Valley Forge Jack Knives

Per dozen.
No. 2143—Three Blades. Patent Stag, Brass Lined, 3¾ inches, Spear Blade..... $16 00

Per dozen.
No. 2353—Three Blades. Patent Stag, Brass Lined, 3½ inches, Clip Blade.. . ... $16 00

Per dozen.
No. 2213—Three Blades. Patent Stag, Brass Lined, 3¾ inches, Spear Blade $16.80

Per dozen.
No. 2033—Four Blade Congress. Patent Stag, Brass Lined, 3½ inches, Sh. Foot Blade..... $13 80

Per dozen
No. 2048—Four Blade Congress. Patent Stag, Brass Lined, 4 inches, Sh. Foot Blade... ..... $16.80

In addition to the pocket knives shown on the preceding pages, we carry a large variety of cheaper German patterns, which can only be sold by sample. Our salesmen carry a full line of these samples and they are in a position to quote attractive prices.

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Illustrations reduced one third.

Valley Forge Jack Knives

Per dozen

No. 2053—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade.. . . . . $7 25

Per dozen.

No. 2063—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade..... $9.30

Per dozen.

No. 2028—Two Blades. Patent Stag, Brass Lined, 3⅛ inches, Sh. Foot Blade..... ..... $9.30

Per dozen.

No. 2018—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Sh. Foot Blade $10.00

Per dozen

No. 2453—Two Blades. Patent Stag, Brass Lined, 3⅛ inches, Spear Blade..... .. .. $10.00

Per dozen.

No. 2248—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade..... $10.00

Per dozen.

No. 2073—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade..... $10.00

Per dozen

No. 2258—Two Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade..... $10.80

Half Dozen in a Box.

Illustrations reduced one-third

Valley Forge Jack Knives

Per dozen

No. 2004—Two Blades. Patent Stag, Brass Lined, 3¾ inches, Spear Blade..... $10.50

Per dozen.

No. 2070I —Two Blades. Ivoride, Brass Lined, 3¼ inches, Spear Blade. $10.50
No. 2070S — " " Shell, " " 3¼ " " " 10.50
No. 2070SP— " " Smoked Pearl, Brass Lined, 3¼ inches, Spear Blade..... 10.50

Per dozen.

No. 2203—Two Blades. Patent Stag, Brass Lined, 3½ inches, Spear Blade..... $12 60

Per dozen.

No. 2183—Two Blades. Patent Stag, Brass Lined, 3½ inches, Spear Blade..... $16 80

Per dozen

No. 2208—Three Blades. Patent Stag, Brass Lined, 3¾ inches, Spear Blade..... $15.00

Per dozen.

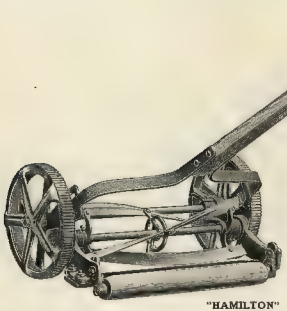
No. 2253—Three Blades. Patent Stag, Brass Lined, 3¼ inches, Spear Blade..... $19 00

Per dozen.

No. 2338—Three Blades. Patent Stag, Brass Lined, 3¼ inches; Spear, Sh. Foot and Spey Blades.. $15 30

Half Dozen in a Box

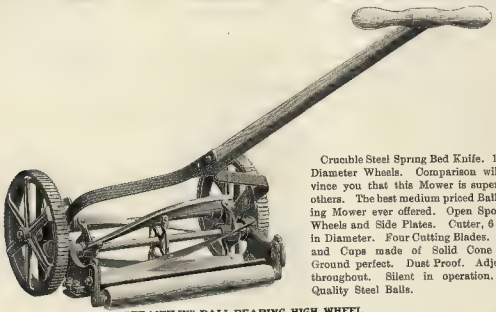
LAWN MOWERS



Same grade as "Volunteer."
Wheels, 9 inches in Diameter.
Reel, 5¾ " " "
Three Blades.
Wheels, Finished in Gold Bronze, striped with Black.
Handle Braces, Red.
Reel, Cutter Bar and Tie Rod, Aluminum.

"HAMILTON"

Width of Cut, inches	10	12	14	16	18
Hamilton Each	$4.10	4.30	4.50	4.70	5.30

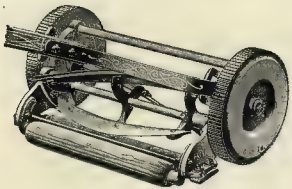


Crucible Steel Spring Bed Knife. 10 inch Diameter Wheels. Comparison will convince you that this Mower is superior to others. The best medium priced Ball-Bearing Mower ever offered. Open Spokes in Wheels and Side Plates. Cutter, 6 inches in Diameter. Four Cutting Blades. Cones and Cups made of Solid Cone Steel. Ground perfect. Dust Proof. Adjustable throughout. Silent in operation. Best Quality Steel Balls.

"FRANKLIN" BALL-BEARING HIGH WHEEL

Width of Cut, inches	12	14	16	18
Franklin Each	$7.40	7.70	8.00	8.50

LAWN MOWERS

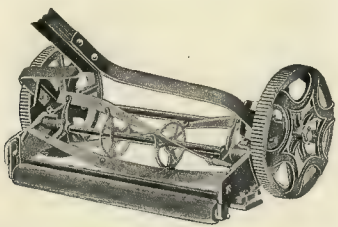


"SYLVAN"

Finish, Gold Bronze and Green Enamel. Three Cutting Blades. High Speed. Thoroughly Adjustable. 8 inch Wheel. 5¾ inch Reel.

Width of Cut, inches		10	12	14	16
Sylvan	Each	$3.90	4.10	4.30	4.50

The best Mower of its class made.



"VOLUNTEER"

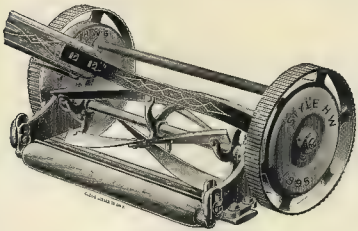
Made of first-class material throughout, the Wheels are large and run on a Polished Steel Spindle. Wheels, 9 inches in diameter. Reel, 5¾ inches in diameter. Three Blades. Finished Wheels and Handle Braces, Red; Reel Cutter Bar and Tie Rod, Aluminum; Striped in Gold.

Width of Cut, inches		10	12	14	16	18
Volunteer	Each	$4.10	4.30	4.50	4.70	5.30

The Reel is a Continuous Shear and runs in Self-Aligning Adjustable Bearings. The Ratchet Clutch is Cast Solid with the Pinion and is one of the strongest and simplest made.

We warrant this Mower against defects in material and workmanship.

LAWN MOWERS



"RIVERTON" HIGH WHEEL

Finish, Gold, Silver and Green Enamel. High Wheels. Easy running. Four Cutting Blades. Heavy Journal Bearings. Wheels, 9½ inches high. Four-Bladed Revolving Cutter. Cutter, 6 inches diameter. Front Bar, 6½ inches from theground. Long Bronze Journal Bearings. Cuts close and does fine work. Spring Bed Knife. Continous Cut.

Width of Cut, inches		14	16	18
Riverton	Each	$7.50	8.00	8.50

"WINCHESTER" BALL BEARING

Constructed on first-class principles. Adjustable throughout. Silent in operation. Cones and Cups made of Solid Cone Steel. No Pressed Cups used. Ground perfect. Best Quality Steel Balls. The Cups, Cones and Balls are Dust Proof, and made with as great a degree of perfection as the best bicycle.

No. **5**, High Wheel. Driving Wheels, 9½ inch diameter. Revolving Cutter, 6 inch diameter. High Grade. Crucible Steel Blades. Finish—Gold and Silver Bronze. Four Cutting Blades.

Width of Cut, inches		14	16	18
Winchester	Each	$10.30	11.30	12.30

LAWN MOWERS

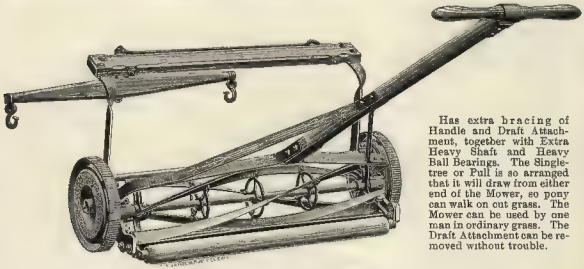
Finish.—Wheels, Aluminum striped with Blue, with Gold Tread; Frame and Braces, Aluminum striped with Blue; Reels, Gold with Blue Edges to Blade; Handles, Round, Dark Wood; Oil Finished.

Train of Gears.—10 inch diameter Wheels; 5 Revolving Blades; Revolving Cutter, 6 inch diameter. All Blades of Revolving Cutter riveted. All Blades on Machine made of the Finest Grade Crucible Steel.

All points of friction in Mower outside of triple gear operated on Ball Bearings, having full Ball Bearing Driving Wheels and Revolving Cutter. Stationary Blade made of Disston Crucible Saw Steel. This Mower has High Grade Set Screw Adjustment throughout, Stationary Knife being Adjusted by Set Screw working on Arms extending from Stationary Knife Bar. In addition to this, you will note from illustration a Set Screw in Stationary Knife Bar. This will adjust the Stationary Knife Bar at the centre and is a patented arrangement that cannot be used by any other manufacturer.

"SILVER QUEEN," BALL BEARING

Width of Cut, inches		14	16	18	20
Silver Queen	Each	$16.00	17.00	18.00	19.00



Has extra bracing of Handle and Draft Attachment, together with Extra Heavy Shaft and Heavy Ball Bearings. The Singletree or Pull is so arranged that it will draw from either end of the Mower, so pony can walk on cut grass. The Mower can be used by one man in ordinary grass. The Draft Attachment can be removed without trouble.

"RICHMOND," BALL BEARING PONY 31 INCH CUT

Height of Drive Wheels, 10 inches. Diameter of Cutter, 7 inches. Four Bladed. Width, 31 inches. Weight, 80 pounds.

Each	$30.00

"PARAMOUNT"
HAND SHAVED HICKORY HANDLES

SUPER EXTRA SECOND GROWTH YOUNG TENNESSEE HICKORY

"YE OLDE TYME QUALITYE"

SINGLE BIT AXE, OVAL

FIG. 2360.

36 Inches, Weight per Crate of 2 Dozen, 42 lbs. ..... list, per doz. $14.00

SINGLE BIT AXE, OCTAGON

FIG 2361

36 Inches, Weight per Crate of 2 Dozen, 42 lbs. ..... list, per doz. $14.00

DOUBLE BIT AXE, OVAL

FIG. 2362.

36 Inches, Weight per Crate of 2 Dozen, 42 lbs. ..... list, per doz. $14.00

DOUBLE BIT AXE, OCTAGON

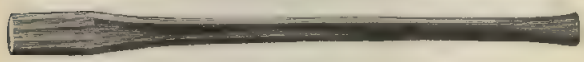


FIG. 2363.

36 Inches, Weight per Crate of 2 Dozen, 42 lbs ..... list, per doz. $14.00

All packed two dozen in a crate. Every handle carefully wrapped.

"PARAMOUNT"
HAND SHAVED HICKORY HANDLES—
CONTINUED

SUPER EXTRA SECOND GROWTH, YOUNG TENNESSEE HICKORY

"YE OLDE TYME QUALITYE"

SLEDGE, OVAL

FIG 2364

30 Inches, Weight per Crate of 2 Dozen, 35 lbs .... ..list, per doz. $9.00
36 " " " " " 2 " 40 " ..... " " " 11.40

SLEDGE, OCTAGON

FIG 2365

30 inches, weight per crate of 2 dozen, 35 lbs..... list per dozen, $9.00
36 " " " " " 2 " 40 " ..... " " " 11.40

SPIKE MAUL, OVAL

FIG. 2366.

30 inches, weight per crate of 2 dozen, 34 lbs..... list per dozen, $9.00
36 " " " " " 2 " 40 " ..... " " " 11.40

All above packed two dozen in crate. Each handle carefully wrapped.

MACHINIST HAMMER, OVAL

FIG 2367

16 inches, weight per crate of 2 dozen, 8 lbs. ... . list per dozen, $3.30
18 " " " " " 2 " 9 " . ... " " " 4.00
24 " " " " " 2 " 12 " .... " " " 6.00

All above packed in neat pasteboard box.

GENUINE HAND SHAVED HICKORY HANDLES

SHAVING OUTFIT SHOWING HOW OUR HAND SHAVED HANDLES ARE MADE

HICKORY TOOL HANDLES

AXE, SINGLE BIT, CROOKED OR STRAIGHT

FIG 2368.

Inches		34	36
Weight per crate 2 dozen	pounds	40	42
"Monarch," No. 1.	list per doz.	$5.85	$6 85
"Fort Pitt," extra	" " "	7 50	7 50
"Bestovall," 2nd growth	" " "	8.75	8 75

DOUBLE BIT AXE HANDLE

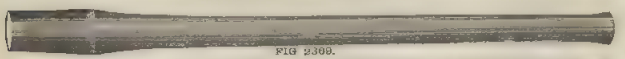


FIG 2369.

Inches		34	36
Weight per crate 2 dozen	pounds	40	42
"Monarch," No. 1.	list per doz.	$3 85	$3 85
"Fort Pitt," extra	" " "	7 50	7.50
"Bestovall," 2nd growth	" " "	8 75	8.75

MINERS' AXE HANDLE

FIG. 2370.

Inches		26	28
Weight per crate 2 dozen	pounds	28	30
"Monarch," No. 1.	list per doz.	$3.00	$3.00
"Fort Pitt," extra	" " "	5.00	5.00
"Bestovall," 2nd growth	" " "	6.00	6.00

ADZE, RAILROAD OR CARPENTER HANDLE

FIG 2371

Inches		34	36
Weight per crate 2 dozen	pounds	45	45
"Monarch," No. 1.	list per doz.	$4.75	$4 75
"Fort Pitt," extra	" " "	7 75	7 75
"Bestovall," 2nd growth	" " "	9.00	9 00

PICK, RAILROAD, CONTRACTORS, SURFACE & MATTOCK HANDLE

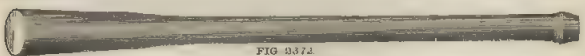


FIG 2374

Inches		36
Weight per crate 2 dozen	pounds,	65
"Monarch," No. 1.	list per doz.	$4.75
"Fort Pitt," extra	" " "	7.50
"Bestovall," 2nd growth	" " "	8.40

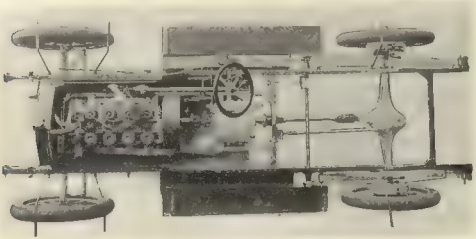
center of the cylinders to reduce the angularity of the connecting rods on the power stroke, and the side thrust and friction of the pistons against the cylinder walls. The half time gears, together with the magneto and pump driver gear and the crank shaft gear, are enclosed in an oil tight casing, which is integral with the crank case proper and entirely separate from the crank compartments. The crank case is made of the highest quality aluminum alloy furnished by the well known Light Manufacturing and Foundry Company, being in two parts, the upper portion containing the crank shaft bearings and the lower portion the lubricating system.

Lubrication.

The lubricating system works on the constant level circulating principle, the reservoir in the extreme bottom holding some two gallons of oil, which is circulated, by means of an eccentric pump of the vane type, to the several bearings and from them it flows to the connecting rod splash bowls, which are gauged to maintain a certain amount of oil, the overflow returning to the well or reservoir. Adjustment can be made from the side of the engine base for varying the amount of oil circulated. Grease cups are supplied on every moving joint or bearing on the chassis.

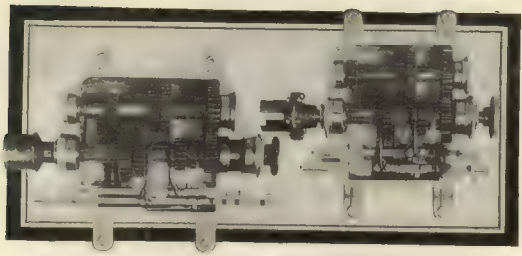
Pullman Motor.

Fig. 2. Two views of the Model K 35 H. P. motor, showing the inlet and exhaust sides. Cylinders are of T type. The special oiling system with gauges which can be set from the outside to determine the crank case oil level is still employed.



Plan View of Pullman Chassis.

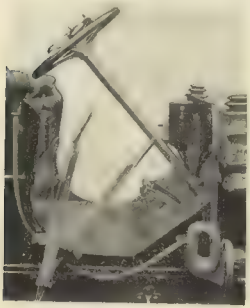
Fig. 4. This view shows the chassis of Model K. Motor four cylinders, 35 H. P.; wheel base 114 inches; leather faced cone clutch with cork inserts. Under pan protects the entire mechanism. Transmission is of three speed selective type, mounted on a sub-frame. Thirty-four inch wheels with four inch tires.



Three and Four Speed Change Gears.

Fig. 5. On the left is shown the three speed and reverse sliding gear set used in the Model K. It is operated selectively. On the right is shown the four speed change gear of the Model M. The shafts are mounted on Hess-Bright annular ball bearings.

The centrifugal water pump and Bosch magneto are located on the left side of the motor and driven by a single shaft from the exhaust cam shaft gear, jaw clutch joints being provided to allow of the removal of either. A Stromberg carburetor is located on the right side of the motor and well forward. Back of the carburetor, and on the front crank hanger arm, is located the oil gauge for determining the amount of oil in the reservoir and a tube which serves the double purpose of oil filling tube and crank case compression relief tube.



Pullman Control Levers.

Fig 6. This view shows the control mechanism of the Model K. Note the inclination of the foot boards which give a comfortable position for the feet.

The cone clutch is faced with chrome leather fitted with cork inserts, and is pilotted on the rear end of the crank shaft. Between the clutch and transmission are fitted double universal joints of the removable square block type. The selective type of transmission is housed in an aluminum casing carried on the sub-frame and affords three forward speeds and one reverse speed. The direct drive and countershafts are carried on Hess-Bright annular ball bearings. The gears are six pitch, wide faced, and turned from forged bars of chrome vanadium, after which they are hardened and oil treated. The gears are also carried on chrome vanadium shafts. The propeller shaft is equipped with two double universal joints of the block and trunnion type. The rear axle has a pressed steel housing and is of the full floating type, with the differential carried on Timken roller bearings. Internal expanding and external contracting brakes, working through equalizers and operated in the usual method, act on the rear wheel brake drums.

The front axle is the conventional I-beam drop forging, the wheels being carried on Timken roller bearings, which are also in the rear axle just inside the wheels.

Frame, Springs and Dash.

The frame is of pressed nickel steel with sub-frame on which is carried the power system. The steering gear is of the worm and gear irreversible type, the gear being a full wheel. The worm is fitted with ball thrust collar bearings for adjustment. The spark and throttle control levers are carried on a stationary quadrant above the 18 inch mahogany steering wheel. The front springs are semi-elliptic, 40¼ inches long and 2 inches wide, with six leaves. The rear springs are semi-elliptic, 51 inches long and 2 inches wide, with six leaves. The fenders

are rakish, made from pressed steel, with the running boards enclosed. Dashes are mahogany, brass bound. The speed control lever and hand brake lever are of manganese bronze.

The bodies are of wood and aluminum, upholstered in hand-buffed leather. The gasoline tank is located underneath the front seat. The wheel base is 114 inches, with 34x4 tires all around. Each car comes equipped with two gas headlights, gas generator, two oil side lamps, an oil tail lamp, horn, tools, coat and foot rails.

The 1911 Model O.

The Model O is regularly fitted with a four passenger detachable Toy Tonneau body, Touring, Surrey, double bucket and regulation Roadster bodies, the price being $1650 with any of those bodies, and $1600 with two passenger or Runabout body.

This car has a four cylinder, four cycle motor of 4 1-32 inch bore and 5 inch stroke. The cylinders are of fine French gray iron, cast in pairs and bolted together, forming one continuous water jacket and giving an "en bloc" effect. The valves are on the opposite sides, being actuated by two cam shafts, are ground and tapered from the lower compression ring at the top, thus allowing for expansion at the upper end without binding. The wrist pins are made from special steel carefully hardened and ground. The connecting rods are forged and are fitted at the lower end with Parsons-Cramp white bearing bronze.

The crankshafts are forged from solid billets of alloy steel and are offset from the center of the cylinders to a degree which gives the highest possible advantages of the offset cylinder. Lubrication is by means of the regular Pullman splash system, using a centrifugal pump as described. The height of the levels of the oil in the crank case compartments is regulated by means of level indicator bands on the outside of the motor. The clutch is of the cone type and is faced with chrome leather fitted with spring inserts to enable the clutch to engage gradually.

The crankshaft has two main journal bearings and one intermediate bearing, the bearings running in Parsons-Cramp white bronze bushings. These bearings are 1⅝ inches in diameter, the front one being 3 1-3 inches long, the center 3 inches long and the rear bearing next to the clutch and flywheel 4½ inches long, which are very liberal proportions for a motor of this size.

The power transmitting system and countershaft bearings are carried on Hess-Bright annular ball bearings.

The rear axle has a pressed steel housing and is the Standard full floating type fitted with ball bearings throughout. The brakes are of very liberal size, of the internal and external types working through equalizers operated in the usual manner on the brake wheel drums.

The bodies are made of wood and aluminum reinforced with steel, and are upholstered in the finest grade of hand-buffed leather. The springs are semi-elliptic in front, 38 inches in length, and are three-quarters elliptic in the rear, 40½ inches in length, giving easy riding qualities, and on account of the lightness of the car, 2300 pounds, the Model O is very easy on tires.

The equipment of the Model O is liberal, including gas headlights, gas generator, two oil side lamps and an oil tail lamp, horn and tools. The standard color is the "Pullman red," a very durable and distinctive shade, blue with straw wheels, or black with straw wheels are also optional colors.

Model M-11.

The largest car is known as the Model M-11. This car is the same in general arrangement as the Model K-11, but the dimensions are, of course, in proportion. The motor is 5¼x6 inch cylinder, cast separately; wheel base, 127 inches; transmission change gears give four speeds, selectively operated. The wheels are 36 inches, fitted at the front with 4 inch and on the rear with 4½ inch tires. The price, with the usual equipment, is $3500.

The Westcott 45-50

The Westcott Motor Car Co., with factory at Richmond, Ind., Sales Department, Indianapolis, Ind., announce the 1911 Westcott models. These machines are powered by the well-known four cylinder Rutenber motor of 45-50 h. p. and are fitted with five passenger touring, seven passenger touring and runabout bodies with double rear seat of folding back type.

One of the features which is given considerable prominence by the makers is the fact that these high powered cars are being sold for $2000 and $2250, marking a new era in car values. The claim is even made that these machines are fully the equal in every way of cars which sell for in the neighborhood of $3500. They are not heavy, weighing but 3000 lbs., although carrying such powerful engines. Interior and exterior refinements which have previously been regarded as exclusive features of only the highest priced cars now found in the makeup of the Westcott 45-50.

The Motor.

This well-known engine is of the four cylinder type; cylinders cast separately, from a special grey iron mixture accurately finished by grinding. The cylinders are 4¾ by 5 and following accepted practice are water cooled. A peculiarity of water circulation consists in introducing the water into the cylinder head at one side having it pass

The Pullman Motor Car Company, of York, Pa., in announcing their 1911 models state that they adhere to their policy to effect mechanical changes only when progress in the automobile art demands them and when they feel that improvements in design and construction are possible or warranted in their product. For that reason the changes in the 1911 machines over the 1910 cars are simply in the nature of refinement of details.

The three 1911 models are as in 1910, Models K, O and M.

The Model K, 35 H. P. touring car, which is very liberally rated, has been lengthened in wheel base from 112 to 114 inches, giving more leg room for the front seat, and increasing the easy riding qualities of the front seat of the machine. The steering wheel has been improved in appearance on the K-11 by the use of a larger brass housing, and is capable of easy manipulation over rough roads. The changing of the shape of the bottom pans of the motor, the raising of the headlight bracket, and the changing of the door shapes to a more straight line effect, are all refining touches that beautify the car. This car comes in either Touring, Toy Tonneau, Roadster or Limousine bodies.

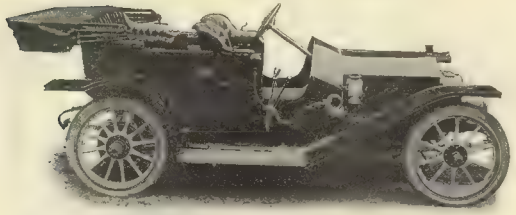
The motor has undergone no change, except in the betterment of the running parts, and the incorporation of a few detail features, which make for quietness and smoothness of the running qualities. It is the strongest testimony to the high efficiency, the sweet running properties and the freedom from trouble of the Pullman motor that it has been employed for six years consistently in the same fundamental type, in which it was developed by Mr. A. P. Broomell, a distinguished Pennsylvania inventor.

A "T" head type of motor is still continued. Among the noteworthy advantages which the company point out in this T-head type of motor are: Accessibility to the valves when it is necessary to regrind or otherwise repair or inspect them, it being unnecessary to remove the valves, as they can easily be rotated by a brace from above; the top of the cylinder is not burdened with long rocker arms or bearing supports and springs when valves are in the head. Arranging the valves on opposite sides of the cylinder permits the spark plugs to be conveniently placed directly above the inlet valve. This causes the spark to occur in the portion of the cylinder where there is the richest mixture. Other advantages are that cylinders are symmetrical as to the projections, and are less liable to warp out of shape than those having all the valves on one side. The valve diameter is not restricted by the necessity of placing two valves, and the surrounding metal and water spaces may be lengthened to the cylinder diameter. Thus the valves can be made larger, and will consequently perform their functions more efficiently, and the piping being distributed equally on both sides of the cylinders makes better balance of these accessories. It also minimizes the fire risk over that of the arrangement with both valves on the same side of the cylinder.

The two cam-shafts also have less strain on them than the single cam-shaft, and may be replaced after it becomes necessary at a less cost than when one cam-shaft only is used.

Model K Engine.

The Model K motor has a four cylinder, four cycle water cooled motor, the cylinders being cast singly from air furnace close grained French gray iron and bolted together so as to form one water compartment. The water jackets are cast integral, having large flanged openings by which the cylinders are cast together. Each cylinder casting may be removed independently of the



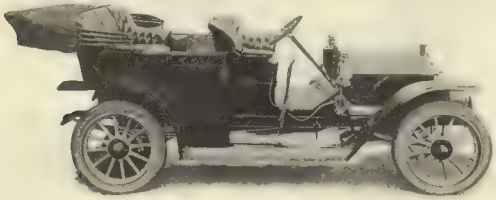
Pullman Model O-11.

Fig. 1. This model uses the 30 H. P. chassis, and is fitted with either Touring or Toy Tonneau bodies. It is also built as a two or three passenger runabout. With regular equipment, the price is $1,600 for the two passenger runabout and $1,650 for the other models.

others without disconnecting any piping. The Model K-11 cylinders are bored 4½ inches standard, with limits of .0005 inch below and above, giving a variation of .001 of an inch. The valves are 2½ inches in diameter, and are on opposite sides of the motor, being actuated by means of two camshafts. The valves have nickel steel heads electrically welded to machine steel stems. The valve seats are beveled 45 degrees, and are ground to size, as are the stems. The valves are adjustable as to timing and clearance by lock nuts on top of the square valve lifters. The pistons, which are of the same material as the cylinders, are ground and tapered from the lower compression ring to the top to allow for differences in expansion due to the heat when in operation. When assembled the pistons and cylinders are hand lapped to insure a perfect fit. The pistons are fitted with three 5-16 inch eccentric compression rings above the piston pin and a series of oil retaining grooves below for distributing the oil around the rings and through the hollow piston pins.

The machining measurements as given on the cylinders also apply to the pistons. The pistons are ground .003 inch below, 4½ inches up to the first ring above the wrist pin, and from that point to the top they are ground to .012 inch. The wrist pins are made from special steel and are tubular in form, of large diameter, all fitted to within .00025 inch. The connecting rods are drop forged from special steel of great elastic limit and tensile strength, and are I-beam in section, being very long between centers. They are fitted at the lower ends with Parsons-Cramp white bronze bearings.

The crank shaft has five bearings running in Parsons-Cramp white bronze. The bearings are of generous proportions, the front main bearings being 1 9-16 inches in diameter and 2¾ inches long, the two center bearings 1⅞ inches long and 1 9-16 inches wide, and the rear bearing next to the flywheel 3⅝ inches long and 1⅞ inches wide. The crank shafts are drop forged from solid billets of alloy steel, and are offset from the



Model K-11, Pullman.

Fig. 2. This model is fitted with either Touring, Toy Tonneau, Roadster, or Limousine body. Price with equipment and tools, $2,000, with the exception of the Limousine. The four cylinder motor is rated as 35 H. P.

AVIATION EVENTS AT ASBURY PARK

Although the gathering at Asbury Park, N. J., August 12 to 20, was more or less a family affair among the Wrights and their pupils, the spectators were treated to some spectacular flying; in fact, a tendency was shown by Hoxsey, Johnstone and other of the young aviators to disregard orders and fly regardless of wind and weather conditions. In the early part of the meet Brooklins was forced to make a sudden descent on account of his motor, but being unable to land where he had intended on the field, owing to the presence of a large group of photographers, was forced to make a sudden change in direction, and in attempting to avoid hitting the grand stand, which was packed with people, landed suddenly amidst a group of spectators, many of whom were seriously injured, the machine being completely wrecked and the aviator himself somewhat bruised and cut about the face He recovered, however, in a few days, and was flying again in his usual form before the end of the meet.

A young parachute jumper, Prinz, while endeavoring to make a double parachute, dropped and was dashed to death, his parachute failing to open. Hot air balloons and parachute jumping were then eliminated from the program during the rest of the week.

Hoxsey, on the 17th, made some remarkable flights, although of short duration, when the fierce and choppy wind, which was blowing at least twenty-five miles an hour off the ocean, was considered. Hoxsey felt he could not disappoint the crowd, who were patiently waiting, shivering in their cloaks on the grand stand as the fog blew in from the ocean. Pushing his machine quickly out by means of his colored attendants, he took his place in his aircraft at the extreme southwest corner of the ground, so as to start facing the wind, and was immediately in the air, but soon came to earth, had the attendants fix the gasoline foot pump, circled the field on the ground under the power of the engine, then, heading into the wind, rose gradually and steadily, but the aeroplane shook and trembled as it was forced into the teeth of the wind. He at no time went higher than 250 feet, but made some most astonishing twists and turns and land-

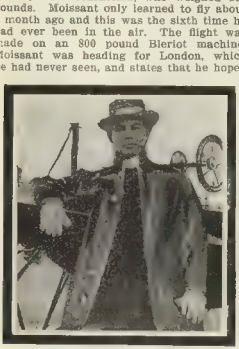
The latest Wright flyer with Farman type wheels arranged on the skids. This machine was flown for the first time in the United States at the Asbury Park, N. J., meet.

ed accurately within ten feet of the door of his tent, which was considered a great feat under the circumstances.

Johnstone, not to be outdone by Hoxsey, also went aloft, and several times every one held their breath, expecting to see him dashed to the ground; but such was not the case. After flying for several minutes in a most spectacular fashion, he finally made a perfect landing in the middle of the field, in answer to the frantic gestures of the managers for him to come down. It was evident that the advancement of the science of aviation will never be retarded by lack of those who are willing to risk their necks.

AMERICAN CROSSES ENGLISH CHANNEL WITH PASSENGER

One of the most daring feats which has yet been performed by an aviator was successfully accomplished on August 17 by a young American architect from Chicago, John B. Moissant, who started from Paris for London, England, and crossed the channel in the teeth of a gale, carrying with him Fileux, his mechanician, who weighed 182 pounds. Moissant only learned to fly about a month ago and this was the sixth time he had ever been in the air. The flight was made on an 800 pound Bleriot machine Moissant was heading for London, which he had never seen, and states that he hoped



John B. Moissant, the intrepid American who has suddenly sprung into prominence by his remarkable cross-Channel flight with a passenger.

to land in Hyde Park, if he could find it. He steered by compass, as he had no other means of guidance. When he reached Calais he had to fly over the town three times before sighting Les Barriques, where he landed.

His flight across the channel, considering that he carried a passenger and on account of the strong wind that was blowing—a wind such as had previously deterred Bleriot, Latham and others—is considered little short of marvelous. He was followed in his flight by only a single slow-going tug, as the torpedo boat which was to have accompanied him was unable to get up steam in time. Moissant landed on the other side before the tug had even reached mid-channel. The flight was made at a height of between 500 and 700 feet, a terrific rain storm being encountered which almost blinded the aviator and makes the flight more remarkable.

Latham also had intended to try the flight from Paris to London, but unfortunately collided with a tree, badly damaging his machine but sustaining no injuries whatever himself.

The good fortune that attended Moissant in the earlier stages of his flight deserted him when almost within sight of London. When at Sittingbourne, about 35 miles from his goal, a small pin in the engine sheared off and he was forced to make a landing, but soon was under way again, but at Rainham, Rent, only 25 miles from London more engine trouble made a quick landing necessary. The aeroplane narrowly missed landing in a quarry and the sudden turn which was made to miss some trees resulted in breaking the frame and the propeller upon landing. Neither of the travelers were injured. J. Anthony Drexel rushed from London a propeller from his Bleriot machine.

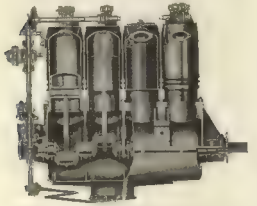
THE FINISH OF THE FRENCH CROSS-COUNTRY AVIATION RACE

Le Blanc, in a Bleriot monoplane, covered 485 miles in 11 hours 55 minutes actual flying time, making him the winner of the greatest cross-country flying event which has yet taken place. Aubrun, also in a Bleriot, took second place, finishing 20 minutes later, his running time, however, being somewhat longer. Le Blanc arrived over Paris at 6.31 in the morning, having averaged nearly 40 miles an hour, which makes no allowance for the detours nor for the time which was consumed between Meziores and Douai in battling against a severe storm. None of the other competitors completed the entire route. However, Legagneau, who had to retire in the early part of the race, together with five army officers who had acted as escorts, all arrived in Paris in quick succession. Eifel Tower and all roofs were black with spectators, and on the field day at Issy the 200,000 spectators almost went wild with excitement as the machines arrived in quick succession, alighting like great birds at the appointed spot. A regiment of stalwart cuirassiers of long experience in handling Parisian crowds, and the extra large number of police were powerless, and the crowd triumphantly bore away the victor on their shoulders to General Brun, the Minister of War, who with his staff and many other high officials was there to welcome the winner.

THE HANSEN-SNOW AVIATION MOTOR

The Hansen Auto and Machine Works, 540 South Lake avenue, Pasadena, Cal., are now marketing a light, yet reliable aeronautical motor, known as the Hansen-Snow. The 4-cylinder engine is reproduced herewith, but they build in addition to this 30 H. P. engine a 6-cylinder vertical and 8-cylinder "V" of the same size cylinder dimensions, 4x4½ inches.

Reliability, the most important requirement, is obtained by the use of ample bearing surfaces, continuous forced lubrication, simplicity of design, ample cooling, together with moderate piston and bearing velocities.



Hansen-Snow Aviation Motor shown partly in section

Efficiency has not been overlooked and is attained by having the compression as high as is consistent with reliability, large valves seated directly on water cooled cylinder, low gas velocity, direct gas passages, compact combustion space and energetic ignition.

Although lightness is not the all-important point that some seem to think, it has not been overlooked, as the weight per brake horse power shows. This result is obtained by the use of high grade materials, and by simple design. "Weight paring," it is claimed, has not been resorted to.

The Construction.

In the 4-cylinder, 4-cycle, water cooled motor, ignition is by Bosch "D. R. 4" magneto, driven by bevel gears from a vertical shaft. The water pump is of the gear type, directly mounted on a vertical shaft. From the pump water passes through a header to the tops of the cylinders on the exhaust side, down this side of the jacket, up the other side and out through the tops of the cylinders and header on inlet side, thence to the radiator. The cam shaft is on top of the cylinders, and together with the vertical shaft and cam rollers is mounted on Hess-Bright annular ball bearings. The valves are seated directly on the water cooled cylinder head, thus keeping them cool, and are each operated by one rocker arm. The cylinder anchor bolts extend through the crank case stanchions and main bearing caps, so that no tensile stress is borne by the aluminum. Oil is drawn from the sump oil pan by a gear pump, and forced through the header to all main bearings and thence to the crank pin bearings. The cylinders are lubricated by splash from constant level oil chambers in oil pan. Ducts in the side of the piston lead oil to the piston pins.

The cylinders are 4x4½ inches and are finished inside and outside. The cylinder barrel is ⅛-inch thick for the greater portion of the length, increasing to 5-32-inch and 3-16-inch around the combustion chamber. The complete cylinder weighs 8.3 pounds, and is anchored to the nickel aluminum crank case by four ⅜-inch Krupp special chrome nickel steel bolts that pass through the crank case stanchions and main bearing caps. The head end of the piston is .006, and the open end is .003, less than the cylinder bore. Four cast iron snap rings 3-16-inch wide are placed at the head end. The piston pin is 1¼ inches diameter and has the bearing in the bosses. The piston and rings weigh less than 3 pounds.

The hollow nickel steel crank shaft is carried in five bearings, whose aggregate length is 11 inches. The crank pins are 1¾ inches long and all bearings are 1⅝ inches diameter. The complete shaft weighs 11.5 pounds

The valve stems are at an angle of 30 degrees with the center plane of the cylinders. This construction insures that the seats, and consequently the valves, will be much better cooled than if cages were used, and will need but a fraction of the attention. All valves are 2 inches effective diameter, 2¼ inches outside diamter and 5-16-inch lift, with 30-degree bevel seats, and are made of nickel steel.

All cams are of the constant acceleration type and at 1500 revolutions of the engine only 19.5 pounds spring pressure is required to close the valves in 40 degrees of cam rotation, and this is done entirely without shock.

The connecting rods are machined all over from hand forgings and milled to an I section. Two ⅜-inch Krupp special chrome nickel steel bolts secure the cap, and the complete rod with piston pin weighs 1.7 pounds.

In the design of this engine a careful analysis was made of the load existing at critical points in all members carrying load and the parts so designed that the stresses are moderate for the material used. The engine is designed to give 32 B. H. P. at 1500 revolutions, but the parts subject to an amount of load depending on the speed are designed for a speed of 2000 R. P. M.

The compression pressure is 75 pounds and the motor complete weighs 140 pounds.

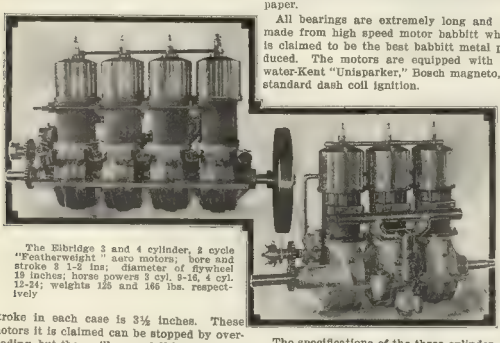
The entire combustion chamber is finished smooth. Water jackets are of copper and

are electro-deposited. The main bearings are lined with Cramp's, Parson's white brass. The crank case, oil pan, and gear housings are cast of the strongest aluminum alloy, and the water and oil pumps are of a special hard brass. The cam shaft brackets, bearing caps, etc., are made of manganese bronze. In all cases, that material is used which, it is believed, will give the best results, and the workmanship is of the quality that makes for reliability, efficiency and life. The price of the 30 H. P. motor, complete with Bosch magneto, carburetor and spark plugs, is $1500 f. o. b. Pasadena, Cal.

THE ELBRIDGE "FEATHERWEIGHT" TWO-CYCLE AERO MOTORS

The Elbridge Engine Company, Culver Road, Rochester, N. Y., has recently placed on the market a two-cycle motor designed especially for aeronautical work; the same being made in 1, 2, 3 and 4 cylinder sizes.

As the name implies these motors are light in weight, the crank case and all fittings being of aluminum. The bore and stroke in each case is 3½ inches. These motors it is claimed can be stopped by overloading, but they will carry full loads all day without overheating. Special attention is called to the crank case design. This is well ribbed and ample space left between the compartments for a long gas tight bearing. The exhaust port is designed with a special view toward rapid scavenging of the firing chamber, so that the hot gases are injected the moment their work is done. The four cylinder engine is rated at 150 pounds stripped. The manufacturers claim that air cooled engines of extremely light weight, running at high temperature, if built too light are certain to warp out of shape somewhere. In this motor the weight problem is worked out in such a manner as to obtain perfectly practical results for aeronautical work.



The Elbridge 3 and 4 cylinder, 2 cycle "Featherweight" aero motors; bore and stroke 3 1-2 ins; diameter of flywheel 19 inches; horse powers 3 cyl. 9-16, 4 cyl. 12-24; weights 125 and 165 lbs. respectively

The pistons and cylinders are made of the finest grade of close grained grey iron. The cylinders are bored nearly to size, seasoned, and after a couple of weeks, finished. The rings are fitted and finished by hand so as to make the best fit possible. The connecting rods are made in four styles of metal—bronze, forged steel, cast steel, and a new metal of special composition, which is very light and tough. The crank shafts are made from hammered forged billets of carbon steel. The crank case is made of aluminum, is extremely compact and just large enough to permit the passage of the throw of the crank shaft and connecting rod—and no larger. It is made in one piece, with bearing pieces inset, and so closely fitted that without packing there would be no appreciable loss of compression. The only packing used to make them absolutely tight is thin manila paper.

All bearings are extremely long and are made from high speed motor babbitt which is claimed to be the best babbitt metal produced. The motors are equipped with Atwater-Kent "Unisparker," Bosch magneto, or standard dash coil ignition.

The specifications of the three cylinder engines illustrated herewith are as follows:

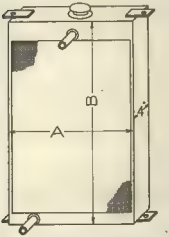
Three cylinder, 9 to 16 H. P., length of engine, 27 in.; length of bases only, 20 in.; width of bases, 10½ in.; width of bolt hole centres, 8¾ in.; height above bed, 16 in.; drop below, 3¼ in.; width below bed, 7 in.; diameter fly wheel, 19 in.; diameter crank shaft, 1⅛ in.; ⅛ in. gasoline connections; weight with aluminum fittings, 125 pounds; weight of regular fly wheel, 25 pounds; price, $475; price includes standard ignition. The same specifications apply to the four cylinder engine with the exception of the

length of the engine, 33 in., and the width of bases, 26 in. Horse power developed by the four cylinder engine is 12 to 24; weight, 165 pounds; price, $650.

AEROPLANE RADIATORS

The El Arco Radiator Company, 6 East Thirty-first street, New York City, have placed on the market, a line of aeroplane radiators in two grades and five sizes.

The El Arco radiators have honey-comb square-cell tubes being spaced ¼ apart on centres. The construction of the tubes avoids the use of spacing strips to form the water passages, usual in square-cell radiators, the water spaces being formed by offsets in the metal of the tubes so that the edges of the tubes present the minimum of resistance to the air, and the tubes can therefore be assembled in the most compact manner possible.



The El Arco Radiator.

These radiators are tested under 15 lbs. air pressure and are guaranteed against defects of workmanship and materials and against clogging up. The two grades are known as "Lightweight" and "Featherweight;" they are made in grades and sizes and at the prices, as follows:

DIAMOND AEROPLANE TIRES

The Diamond Rubber Co., of Akron, Ohio, has just put on the market two new types of their "Diamond" tires, especially adapted for aeroplane use. Both are of the single tube type, one with the regular rubber tread, the other with a special chrome tanned leather tread, to resist the action of the spoon brake upon the surface of the tires, that being the kind of brake used on aeroplanes in alighting. The tires have been constructed to be as light as is possible, consistent with the strength necessary to withstand the shock occurring when the machine alights

"Diamond" Aeroplane Tires.

NOTED AVIATORS COMING TO AMERICA

Grahame White, the well-known English aviator, sailed for the United States from Liverpool, August 22, with two mechanics and a Farman and Blériot racing machine. Radley, another aviator, sailed on the 24th, bringing with him a Blériot racing machine, his manager, R. Hope, and a mechanic. White is to fly at the Harvard meeting under the auspices of the Harvard University Aero Club, September 3-13. He will afterwards start for some of the big money prizes offered in America, including the New York-St. Louis and New York-Chicago flights. Radley is the holder of the world's speed record of almost seventy-five miles per hour, recently made at Lanark, England, by which feat he won $7000 in prize money.

White and Radley will in all probability represent England in the Gordon-Bennett race at the International meet on Long Island in October, and will endeavor to wrest the speed honors from Curtiss.

DREXEL REACHES 6,750 FEET

On August 11, by a daring altitude flight in England, J. Armstrong Drexel, son of Mr. and Mrs. A. J. Drexel, of Philadelphia, broke all previous altitude records by reaching a height of 6,750 feet, and made a still more daring descent at a terrific pace. His achievement has greatly impressed the British public and press, and his modest demeanor has increased American popularity.

Some regret is expressed that the feat was achieved by an American on a French monoplane.

AEROPLANE SHOCK ABSORBERS

The Kilgore Mfg. Co., Boston, Mass., is making shock absorbers for aeroplanes, with the object of eliminating the possibility of breaking the wheels or other parts of the machine when it alights. The apparatus is made similar to that used on automobiles but of a lighter alloy of aluminum and other metals.

A. P. Warner, of the Warner Instrument Co., Beloit, Wis., disposed of his Herring-Curtiss aeroplane, in which he made numerous daring trips over Beloit, to Joseph Seymour, the racing driver. It is said Mr. Warner has hit upon some ideas as to stability and other features of importance to aerial navigation and these with such points of advantage as were presented by his flights in the Herring-Curtiss machine will be embodied in a new aeroplane.

INCANDESCENT GAS BURNERS

No 50

FIG. 4302.

Pioneer

FIG. 4303.

World's Best

FIG. 4304.

No. 50—Gallery. Large brass basket with long tube and needle point adjustment. Regulated by milled edge wheel
List ..... per dozen, $6 00

Pioneer—Long Bunsen tube with needle point adjustment. Regulated by milled wheel. Long Bunsen tube. Takes any shape or size of globe.
List ..... per dozen, $6 00

World's Best—Gallery. Large polished brass basket with needle point adjustment. Regulated by milled edge wheel.
List ..... per dozen, $6 00

Frederick

FIG. 4305.

No. 17

FIG. 4306.

No. 18

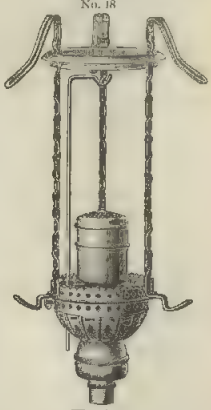


FIG. 4307.

Frederick—Gallery. Suited for all gases. The lever adjustment makes it possible to regulate instantly as the pressure may vary.
List ..... per dozen, $8.00
This burner can also be furnished with lever and by pass attachment or in the post style.

No. 17—Gallery. Regulation size basket. State whether wanted for artificial or natural gas.
List ..... per dozen, $2 40

No. 18—Post. Regulation size basket. With shade and bobeche holders. State whether wanted for artificial or natural gas.
List ..... per dozen, $2.70

QUEEN ACME ARC LAMP

LIGHT OF 50 INCANDESCENTS—CURRENT OF 5

FIG. 4335.

Whilst a small lamp, being 15 inches over all, of elegant design and workmanship, it is strongly built and suited to the most severe service. It possesses, in comparatively small, compact form, the power and lighting capacity of the larger Lamps. Embodied in the Lamp are many new and unique features of construction which assures its perfect operation under all conditions of service.

WHY YOU SHOULD BUY THE QUEEN ACME ARC LAMP

Because it gives the Most Light for the Least Money.

Because it is a Small, Elegant, Well Made, Easily Handled Lamp, as opposed to a Heavy, Cumbersome, Expensive and Difficult to handle Lamp.

Because it is the only Lamp under which Colors can be Satisfactorily Matched.

Because it gives a Beautiful Pure White Light like Day Light, without Flickering.

Because it Pays for itself in a Few Weeks, and thereafter returns Regular and Continual Dividends.

Because the carbons burn *28 to 30 hours*, thus making one trim a week, on an average of 5 hours' burning a night.

No. 25.	Direct Current,	110 volts	.....	list price,	$15.00
" 26.	" "	220 "	.....	" "	15.00
" 27.	Alternating Current,	110 volts	.....	" "	16.50
" 28.	" "	220 "	.....	" "	16.50

In ordering, care must be taken to specify whether alternating or direct current circuits, and also the line voltage, thus insuring the Lamp to be made and tested to meet the conditions under which they are operated. Full data should be given.

GAS AND ELECTRIC FIXTURES

Length, 36 inches. Spread, 20 inches.
Rich gilt and venetian finish. For gas only.

No. 2—2 lights...List price, each, $6.00
" 3—3 " ... " " 7.00

FIG. 4293.

No. 20 Indoor

FIG 4294.

COLUMBUS GAS ARC LAMPS

NO. 20 INDOOR

Four burners. Rod brass burner with pilot jet lighter, special long Bunsens, with needle point adjustments and center supports. Fancy brass band trimmings. Opal lead glass shade 18 inches in diameter. Opal lead glass smoke shade 7 inches in diameter. Clear lead glass globe 9 x 9. Oxidized finish. By turning up needle point valve located under Bunsen tubes, gas can be shut off, permitting burning of gas in one or more mantles as desired.

List price.....each, $10.00

No. 11 Outdoor

FIG. 4295.

NO. 11 OUTDOOR

Four burners. Steel shade 16 inches in diameter, porcelained in white, and top ventilator in blue. Clear glass globe 12 x 12. Pipe nickel plated. Other parts finished in oxidize.

List price.....each, $12.00

Prices do not include mantles. Lamps carefully packed. No allowance made for breakage of glass in transportation. No charge for packing.

GAS ARC LAMPS

No. 25 Indoor

FIG. 4306.

No. 22 Outdoor

FIG. 4309.

No. 26 Indoor

FIG. 4310.

No. 25 Four burners. Center stem. Bunsen burners and adjustable needle valves. Adjustable pilot light. Glassware—10 inch globe, clear, frosted or opalescent. (Specify which.) 14 inch opal upper shade. 18 inch lower shade.

List, each.....$12.00

No. 22 Four burners. Double feed tube system and key valve. Oxidized brass and copper. Adjustable needle valves and pilot light. Burners can be shut off so as to use one, two, three or four lights. Bunsen burners. 11 inch globe, clear, frosted or opalescent. 16 inch enameled steel reflector. Enameled steel housing. Absolutely wind, rain and dust proof. Burners adjusted without removing globe.

List, each.....$15.00

No. 26 Four burners. Burner same as No. 25 in construction and finish. 16 inch enameled steel shade and canopy. 10 inch globe, clear, frosted or opalescent. For use in factories, warehouses, freight stations, etc. Dust and dirt proof.

List, each.....$9.00

INCANDESCENT GAS LIGHTS

Hamilton

FIG. 4296.

New Light

FIG. 4297.

Pioneer

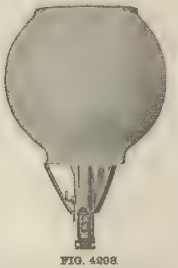


FIG. 4298.

Hamilton—Large basket burner. Needle point adjustment. Regulated by small set screw at the side and suitable for either gallery or air-hole glassware. Fitted with large opal globe and high grade regulation size mantle. List price..... each, $1.00

New Light—Large polished brass basket. The construction of the Bunsen air chamber allows the highest combustion of the gas and consequently consumes little gas. Complete with opal air hole gallery globe and large high-grade mantle. List price..... each, $1 25

Pioneer—Long Bunsen tube burner with needle point adjustment. Regulated by milled wheel. Brass tripod adapting the burner to all styles of glassware. Complete with large opal globe and regulation size mantle. A very powerful burner, giving a large white light at small expense. List price..... each, $1 00

Everlasting

FIG. 4299.

No. C

FIG. 4300.

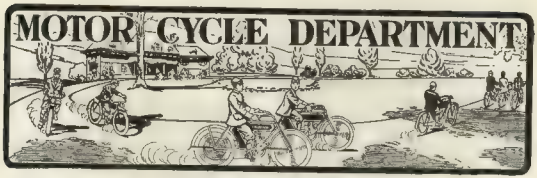
World's Best

FIG. 4301.

Everlasting—Brass basket burner, regulation gallery size with needle valve adjustment. Long tube. Fitted with opal air-hole chimney and regulation size mantle. A good light complete at a popular price. List price..... each, $0 60

No. C—Large polished brass basket. The construction of the Bunsen and air chamber allows the highest combustion of the gas and consequently consumes little gas. Easily regulated. Complete with imported air-hole chimney, 10-inch opal shade and tripod. List price..... each, $1.50

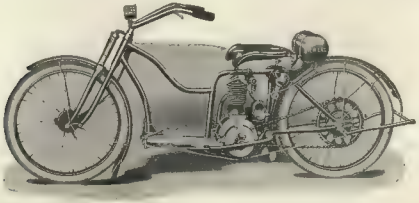
World's Best—Large polished brass basket burner. Needle point adjustment. Fitted with opal air-hole chimney and high-grade mantle. List price..... each, $1.00



The 1911 New Era Auto-Cycle

The 1911 New Era Auto-Cycle, made by the New Era Auto-Cycle Co., of Dayton, Ohio, presents many novel features.

The Company has for three years been building, and has had on the market a two speed transmission and a free motor. It met with favor in the start, and has been a successful running machine. Its development has been of great interest. Experts, who have inspected the 1911 Model, which was first seen in the F. A. M. Endurance Run at Philadelphia on August 8th of this year, have pronounced it perfect.



The 1911 New Era Auto-Cycle. This has a two-speed transmission and free motor. Transmission is enclosed in a housing securely bolted to the crank case of the motor. Drive is by chain.

This machine showed its wonderful hill climbing capacity in the F. A. M. Endurance Run between Hackettstown and Stroudsburg, as the riders of the New Era were not compelled to dismount their machines in climbing the unusually steep hills on the afternoon of the first day, and in fact, the New Era was the only Auto-Cycle that carried its rider up every hill.

There are two Models for 1911—a 4 H. P and a 6 H. P. single cylinder, air cooled motor with radial ball bearings and a one piece crank shaft. The ignition is by a battery or magneto. The motor is started by means of a crank (no pedals), and runs free while the Auto-Cycle stands still. The low speed, high speed and brake levers are on the foot-board, which is made of aluminum. The Auto-Cycle starts at a very slow speed (less than one mile an hour), and can be thrown from low speed to high speed by means of the feet. The low speed has a ratio of 11 to 1, and high speed 4 to 1. The transmission is enclosed in a housing, securely bolted to the crank case of the motor. The drive is by single chain, 6-16 wide, ¾ pitch. The brake is internal expanding on the rear wheel.

Another novel feature in the construction of the New Era is the form seat, which is upholstered so that, it is claimed, saddle soreness and saddle fatigue is entirely unknown to the rider. The cushion spring fork used on this machine is very effective, and it is claimed that with the 62 inch wheel base, the cushion spring fork and the position of the form seat, the vibration is entirely done away with, and very greatly increases the comfort of the rider. The frame is of pleasing design and low saddle position, being only 29 inches from the ground with ample road clearance underneath the motor, assuring the rider low and safe position, preventing skidding and falling. The heavy gauge tubing used in the building of the frame has in the past three years demonstrated to the rider of the New Era that there is no possibility of the frame breaking at any point.

FIFTY-SEVEN PERFECT SCORES IN WESTERN DISTRICT ENDURANCE RUN

Out of the seventy-one starters in the endurance run of the Western District of the F. A. M. from Chicago to Indianapolis and return, fifty-seven finished on time. Following this run was the elimination trial in which twelve members entered, four teams of three each. The original two days' run was not severe enough to fully test the endurance qualities of both riders and machines, and it was therefore necessary to hold elimination trials to determine the winner. The following entered the elimination trials: Thompson, Richardson and DeSalvo (Excelsior); Ingram, Oberwegner and Baird (Yale); Nicholson, Crocker and Squier (Thor); and Whitney, Crandall and Hinckley (Indian), with the following ten private owners: Underhill (Harley Davidson), Turner (Merkel), Leander (Thor), Gillespie (Excelsior) and Juerergens (Thor), Hodgin (Indian), Grepp (Indian), Mitchell (M. M.), Davis and Wilson (Excelsiors). All but two of the above riders reached the Monday night control on time. On Tuesday night all the teams reported perfect scores as well as eight of the private owners. On Wednesday morning the second elimination trial was begun from Chicago to South Bend and return. The Indian and Yale teams started under protest, with the consequence that Whitney withdrew his team, he being under the impression that the protest was sustained, although such was not the case. This left three teams to start—Excelsior, Yale and Thor. By Friday night some of the riders covered as high as 1,350 miles.

Results of the Elimination trials will be printed in our next issue

The Endurance Run

The weather conditions throughout the run were ideal. Had it rained it would have tested the endurance of the hardiest riders and tested the standing up qualities of the machines. Between Chicago and Hammond the riders met with mud, but hard narrow paths of solid earth along the road gave the riders an opportunity to do some zig-zag riding. After about forty miles had been covered traveling was better. From Valparaiso, the first checking station, to South Bend, the noon control, hard dirt roads made traveling easier. At South Bend the contestants fed the inner man. Some of the boys were ahead of schedule and two unlucky ones were made the victims of a rule laid down by President F. I. Willis, who secreted himself in a garage about 150 miles out from Chicago, and took their times as they whizzed past. At Kimmel and between Noblesville and Churbusco, mud holes every hundred feet or so caused most of the riders to take spills. Wherever possible sidewalks were used. Fort Wayne, 189.2 miles from Chicago, the first night control, was reached on time.

Next morning, after leaving Fort Wayne, mud, clay and sand were again encountered, and one stretch of a few yards was impassable. This short stretch was passed, however, by dismounting and pulling the machines through the mire. The worst stretch of the run was met between Peru and Logansport. It was not a road but simply a half mile cut over a field to the next main road. Although many attempted to pass through this stretch without dismounting, none succeeded. The noon control was at Kokomo. In the evening fifty-seven checked in in front of the Dennison Hotel, in Indianapolis, and among them was a girl, Miss Clara Wagner. Although accompanied by her father, she required very little assistance. Officially she was not a contestant but was nevertheless permitted to sign her name to all checking sheets. Her performance was truly remarkable and showed a display of nerve and skill which would have done credit to many a male rider.

SPRINGFIELD RELIABILITY RUN

Wm. Kothe, a member of the Springfield (Mass.) Club, gave a valuable silver cup two years ago, as a prize for an annual reliability run of 300 miles, run on a schedule of 25 miles an hour, and to become the property of the member who should win it three times. The first year Chas. Spencer, who established the world's 24-hour record, won the cup, and the second year Geo. Holdin, also a rider of repute, was victorious.

This year the run, held on October 9th, was won by Chas. Spencer again. The route was from Springfield to Worcester, back to Springfield, to Albany and then back again. Threatening weather on the morning of the start proved discouraging, and only six riders appeared. These dropped out one by one, a severe thunderstorm in the afternoon, leaving only Spencer on his 6 Indian and Moody on his 4 Indian.

Controls were established at Worcester, Springfield, Pittsfield and Albany, and Spencer finished with a perfect score. Moody, however, was only 1 minute 35 seconds behind, and the performance of the two was indeed splendid and unusual.

WESTERN DISTRICT HOLDS MEETING

At the meeting of the Western District of the F. A. M., held on Thursday night, October 6th, at the New Southern Hotel, Chicago, over 100 members were present. The treasurer reported a balance in the treasury of $185.97. The Western District now has 1,200 members. The annual election also took place. The officers elected are as follows: L. J. Berger, of Chicago, vice-chairman; A. R. Oberwegner, declining the nomination; S. J. Leonard, of Chicago, secretary, and J. A. Campbell, of Dayton, Ohio, treasurer. President Willis suggested that a committee on constitution and bylaws for the Western District be appointed. The suggestion was adopted and appointments will soon be made.

RESULTS OF MILWAUKEE MEET

On Saturday, October 1st, the Milwaukee Motorcycle Club held its second annual meet at the state fair track. About 3,000 people were present. W. J. Tuebner, on a Merkel, carried off the honors of the day. He made a mile in .54 1-5 and broke the track record for 25 miles, time, 23:39 3-5.

Harvey Bernard, on an Indian, took second place; Ralph Sporleder, on an Indian, finished third, and Oak Fisher, also on an Indian, finished fourth.

Sporleder on a Waverley Motor Special. He won the 10 mile and 5 mile open events.

In the ten-mile open event, Ralph Sporleder, on a Waverley motorcycle, had no difficulty outspeeding his rivals. He finished in 10:04 3-5. Harvey Bernard was second. Champion Huyck had chain trouble m this race also and was compelled to quit during the first mile.

Sporleder also took the 5-mile open event in 5:08 3-5.

Summaries:

Five mile novice, 30½ inches—Edmond Buckley, Indian, first, time 5.46 3-5; Edwin Becker, Harley-Davidson, second; Oscar Becker, Harley-Davidson, third; Ray Comstock, Harley-Davidson, fourth.

Ten mile open, 61 cubic inches—W. J. Tuebner, Merkel, first, time 9.32 3-5; Harvey Bernard, Indian, second, time 10.07; Oak Fisher, Indian, third; Lacy Crollous, Harley-Davidson, withdrew during eighth mile; Freddie Huyck, Merkel, withdrew during third mile.

Ten mile open, 30½ cubic inches—Ralph Sporleder, Waverley Motor, first, time 10.04 3-5, Harvey Bernard, Indian, second, time 10 19 1-5, Oak Fisher, Indian, third; Freddie Huyck, Merkel, withdrew during first mile.

Five mile, private owners, 30½ cubic inches—Edwin Becker, Harley-Davidson, first, time 5.42 3-5; Edmond Buckley, Indian, second, time 5.48 1-5; M. Ketchum, Harley-Davidson, third; Oscar Becker, Harley-Davidson, fourth; Allen Blenkenheim, Thor, fifth.

Five mile open, 30½ cubic inches Ralph Sporleder, Waverley Motor, first, time 5.08; Oak Fisher, Indian, second, time 5.17 4-5; Harvey Bernard, Indian, third.

Five mile, private owners, 61 cubic inches—Ralph Sporleder, Indian, first, time 4.34; J. A Turner, Merkel, second, time 5.37; Allen Blankenheim, Indian, third.

Ten mile open, 61 cubic inches—W. J. Tuebner, Merkel, first, time 9.39; Harvey Bernard, Indian, second, time 9.32 1-5; Frank Ollerman, Harley-Davidson, third; Lacy Crollous, Harley-Davidson, fourth; Oak Fisher, Indian, withdrew during second mile.

Five mile Wisconsin riders—Frank Ollerman, Harley-Davidson, first, time 4.57 1-5; Lacy Crollous, Harley-Davidson, second, time 5.00; Oak Fisher, Indian, withdrew during third mile.

Twenty-five mile open, 61 cubic inches—W. J. Tuebner, Merkel, first, time 26.39 3-5; Harvey Bernard, Indian, second; Ralph Sporleder, Indian, third; Oak Fisher, Indian, fourth.

BIG CROWD AT SYRACUSE RACES

Over 40,000 persons attended the motorcycle and auto races at the New York State Fair grounds, on September 17th, held under the auspices of the Syracuse Club. Ralph De Palma twice lowered the world's automobile record for a mile circular dirt track, and then lowered the world's five-mile record. In the motorcycle races the five-mile free-for-all was won in 4:45.4, the five-mile twin in 4:52, the five-mile in 5:46.27, the five-mile twin club championship in 5:05.82, and the five-mile single club championship in 5:59.9.

Forty-two men entered in the races. There were twenty-one entries in the club championship for singles, sixteen of which started. Nine large silver cups were offered as prizes. Three of these were captured by Rochester riders, one went to Auburn while the rest stay in Syracuse. On Saturday evening the Syracuse Motorcycle Club gave a banquet at the Vanderbilt Hotel in honor of the visiting riders. There were riders present from Rochester, Syracuse, Auburn, Binghampton, Ithaca and Pottstown, Pa.

OCTOBER 2 AT DETROIT

Much excitement and several narrow escapes marked the motorcycle races of the Detroit Club on October 2nd, J. E. Merz having the closest call. He got into the "Oldfield Rut" on the backstretch and skidded terrifically, righting his machine in what seemed a miraculous manner after a 100 foot slip.

The most important event of the day, the hour race, was cut to one-half hour on account of darkness, and was won by Merz, who covered 32 miles, covering the last lap on the rim.

Don Klark was the star of most of the events, riding in a manner which kept the crowd in constant enthusiasm

Summaries:

Five mile novice open.—First, A. M. Carter, 7 Merkel, second, W. H. Harcourt, 7 Merkel; third, B. Gould, 5 Indian; time, 5.34 3-5. Twenty-five mile open, singles—First, Harry Nixon, 4 Merkel; second, Jim Butler, 4 Merkel; third, B. Gould, 4 Harley-Davidson; time, 24.55. Five mile, $1.00, private owners—First, Don Klark, 7 Indian; second, W. H. Harcourt, 7 Merkel; third, J. Groll, 5 Indian; time, 4.50 4-5. One mile time trial—Harry Nixon, 54 4-5, on a 7 Merkel. Unknown distance—First, Don Klark, 7 Indian; second, John Merz, 7 Merkel; third, Harry Nixon, 4 Merkel; two miles, time, 1.58 2-5. Five mile club members, singles—First, Don Klark, 4 Indian; second, A. Weitzman, 4 Merkel; third, Fred Kirk, 4 Excelsior; time, 5.24 4-5. Half-hour race—First, Johnny Merz, 7 Merkel; second, Don Klark, 7 Indian, third, Harry Nixon, 4 Merkel; 32 miles in 30 minutes.

FIRST MOTORCYCLING RACES AT BELMONT TRACK, NARBERTH, PA., VERY SUCCESSFUL

A large crowd gathered to see the first automobile and motorcycle races held at the Belmont driving park at Narberth, Pa., on September 24th. The motorcycle races were run first and were most exciting. A splendid showing was made by Wm. J. Dougherty, riding a C. V. S., and who came in third in the 5-mile trade class, and fourth in the 10-mile handicap. Making good, considering it was only his second race. The track was rough in spots, but nevertheless good times were made. The summaries follow:

Ten miles, handicap—Georke, Indian, scratch; Frank Hart, R-S 7, scratch; Mercier, Indian 7, 1.00 start; Wm. J. Dougherty, C. V. S. 7. Time, 12.29 1-5. The two scratch men caught the limit man in the last half mile and Goerke won by four yards in a sprint.

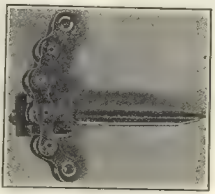
Five miles, match—Chapple, Merkel 7; Seery, Indian 7; W. H. Robinson, Indian 5. Time, 4.42 3-5. The race was between Chapple and Seery.

Five miles, trade—Hart, R-S 7; Goerke, Indian 7; Wm. J. Dougherty, C. V. S. 7. Time, 4.40 3-5. Goerke's time was 4.42. C. H. Thompson, Merkel 7, led during the first mile. Hart and Goerke made a hair-raiser of the last mile, taking chances in trying to pass each other.

Fifteen miles, professional—Seery, Indian; Robinson, Indian; Chapple, Merkel. Time, 15.04 4-5.

NEW CHAIN REPAIR TOOL

The F. B. Widmayer Co., of 2312 Broadway, New York City, has put on the market a number of useful motorcycle accessories. The illustrated "Flash" Chain Repair Tool will undoubtedly prove one of the most useful of them, as, taking up little room, it can be carried in the tool case, and will make chain repairing on the road an easy matter. It is made for ⅝ inch roller chains only, and consists of a slotted block



The "Flash" Chain Repair Tool.

with a central groove to receive the broken link, fitted with a grip bar and a jackscrew operated by a pin. After the link has been placed in position, screwing up the jackscrew forces the side plate off the rivets, enabling the link to be withdrawn. The end of the grip has a screwdriver edge, and may be used as an additional help in removing obstinate side plates. The tool sells for $1 and $1.25.

YALE Motorcycles

Hold the world's record for endurance. Operated at lowest up-keep cost of any. Ran 132 hours without fan or other cooling device, and DID NOT OVER-HEAT

LONG STROKE MOTOR; SILENT MUFFLER; COMFORTABLE TO RIDE; EASY TO OPERATE

RIDE A YALE—THEY NEVER FAIL

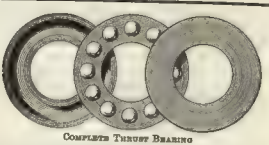
1910 Models being delivered. Write today.

Get our booklet, "What is Reliability?"

THE CONSOLIDATED MFG. CO., 1710 Fernwood Ave., Toledo, O.

THE STAR BALL RETAINER CO.

Lancaster, Pa., U.S.A.



Complete Thrust Bearing

Radial Retainers

Manufacturers of Radial Ball Retainers, Thrust Ball Retainers, Complete Thrust Bearings, Special Stamping, etc.

Thor
TRADE MARK

MOTORCYCLES

Won Every Big Motorcycle Endurance Contest During the Season

Only Perfect Scores F. A. M. National Endurance Contest of 505 miles.

Only Single Cylinder to finish Indianapolis Endurance Contest of 364 miles.

Winner of Elimination Contest for Examiner Trophy held by Western District F. A. M., distance, 2,400 miles; the Severest Test ever given a motorcycle. The Thor IV covered the course every day without losing one minute at any control. This is indeed a wonderful Endurance Record.

1911 Models now being delivered.

Aurora Automatic Machinery Co.
Thor Building **Chicago, Ill.**

NEW MOTORCYCLE COMPANY FORMED

The Pontiac Motorcycle Co. is the name given to a new concern incorporated in Detroit, Mich, for the purpose of manufacturing a twin cylinder chain-driven machine of three and one-half horse power, weighing about 125 pounds, which will be placed on the market next spring.

The concern has been incorporated for $600,000, and its stockholders are made up of men prominent in the automobile industry. Among them are: Dr. James B. Book, Charles L. Palms, E. LeRoy Pelletier, Robert M. Brownson and Harry L. Cunningham. Robert M. Brownson will be president of the new concern and Geo. W. Sherman, sales manager.

Dr. Book and Mr. Palms were, until the recent sale to J. P. Morgan & Co., the largest stockholders in the E-M-F Co. Mr. Brownson has been secretary and treasurer and chief legal adviser of the same company and also was a stockholder. He has resigned his position to become general manager of the new concern. E. LeRoy Pelletier is well-known as the advertising manager of the E-M-F Co. A plant is under construction in Pontiac and will be in operation Jan. 1. The company owns a tract of 19 acres on Saginaw street, opposite the plant of the Welch Motor Car Co. About $500,000 is being spent for plant and equipment.

GUTTENBURG ON OCTOBER 2.

Sunday, October 2nd, saw some fast going at the Guttenburg track, speed which was remarkable considering the soft and dusty character of the track. Seery, who was expected to star, disappointed the crowd, a fall taking the starch out of him.

Chappel, on his Merkel, easily won the 25-mile event, finishing 1¾ miles ahead of his field in 25:43 1-5. Again, in the 5-mile race, after losing an eighth mile at the start, he caught Seery by a great burst of speed and won by 75 yards.

The 10-mile event for trade riders provided a sensational race between Mercier (Indian) and Hart (R-S). After these two had run neck and neck, on the last lap Mercier shot ahead and won.

Hart, when over a half mile ahead on the 17th mile of the 20-mile handicap, broke an exhaust valve. French (Indian), scratch, won by a half mile, Mercier coming in second.

The novelty race furnished much amusement, the riders having to stop and drink a bottle of soda at the end of the first mile, and after the second mile remove a spark plug and hold it up for inspection. Mercier proved the best juggler, and won by a mile.

The Dallas Club, Dallas, Texas, has decided upon the building of a $2,000 club house, which will be equipped with fifty individual lockers, reception halls, baths and other conveniences.

M. M. MOTORCYCLE FOR WORLD JOURNEY

Gottfried Rodrigues, a Holland newspaper man, is attracting considerable attention. He recently passed through Oklahoma City and Fort Smith, Ark., on his way from Brockton, Mass., to San Francisco, Cal. The motorcycle was built by the American Motor Co., of Brockton, Mass., and Rodriguez is using it in completing his journey around the world for a wager of $12,000 made by the proprietor of the newspaper which gave him employment.

NOTEWORTHY ECONOMY CONTEST

At the recent economy contest held on the 25th of September at the Guttenberg Race Track, New York, Frank Hart, riding a twin 6 H. P. R-S, made the longest distance on a pint of gasoline, making 12¼ miles. The nearest competitor was an Indian that made 10¾ miles. In the single cylinder class the N. S. U., 4 H. P., made 25 miles, and the Excelsior, 4 H. P., 22 miles. In the novice race the same day, Chas. Ruck, on a Reading Standard, won the five-mile race in the time of 5:12.

OURS WINS EXCITING RACE

In the motorcycle race at the county fair in Clarksburg, West Virginia, on Sept. 21, W. W. Ours, riding an R-S machine, won after an exciting ride. The last to get away in the running start, the way he caught and passed the others brought forth the greatest enthusiasm.

David Moline, in an economy contest on the Guttenburg track, mounted on a 4 N. S. U., traveled at the rate of from twenty to thirty miles an hour for 26¾ miles on a consumption of one pint of gasoline or at the rate of 210 miles to a gallon.

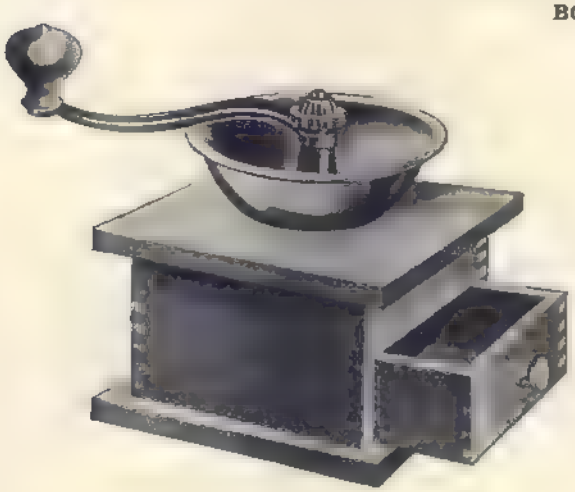
Lon Chaffin, of Salt Lake City, has an enviable record, having won every race he entered, seventeen in all on the Motordome He rides a five H. P. engine, which will do a mile in 52. With his four cylinder, he captured first place in every one of the eleven races he entered, thereby being unbeaten in twenty-eight races.

The Indiana Club of Indianapolis, although organized only two years ago with a charter membership of six, has now increased its membership to one hundred and forty. The club has large commodious rooms at 444 West Vermont Street. Its officers are: Harry Graf, President; Herbert Flack, Vice-President; M. J. Power, Secretary and Treasurer, and Nelson Hodgin, Captain.

At the one-mile motordrome of Los Angeles, DeRosier recently rode 100 miles in 1:21:00, thus beating his previous world's record of 1:26:14 4-5.

COFFEE MILLS

BOX



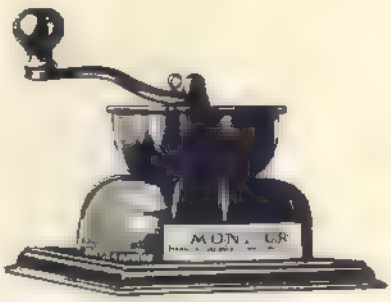
NO. 950

Dimensions, 5½ x 5⅛ x 3¾ inches.

Castings, Brown Enameled Finish.

No. 950 Tin Hopper ..... Per dozen $4 00

Six dozen in a Crate.



"MONITOR"

Bottom and Body are Drawn from a Single Piece of Sheet Steel. Seamless Steel Coffee Receptacle. Black Japanned Finish.

"Monitor," All Metal ..... Per dozen. $4 00

One dozen in a Case.

NO. 1088

Dimensions, 6 x 6 x 3¾ inches.

Castings, Black Japanned.

No. 1088 Raised Iron Hopper..... Per dozen $5.50

Half dozen in a Box.

NO 42

Dimensions, 6¾ x 6 x 5 inches.

Wood Bottom Drawer with Rounded Tin Sides. Castings, Coppered Finish, Cast Iron Swinging Cover, with Grasping Handle.

No. 42 Sunken Hopper ..... Per dozen $8.25

Half dozen in a Box.

COFFEE MILLS

BOX

NO. 104 AND 103
JAPANNED IRON HOPPER

No.	Dimensions, inches.	Per dozen.
104	5 x 5 x 3	$8.50
103	5 x 5 x 3½	9.00

Half dozen in a Case.

NO. 1080

Dimensions, 6⅝ x 6⅝ x 7⅝ inches.

Wood Bottom Drawer with Rounded Tin Sides, Castings Brown Enameled Finish.

No. 1080 One Pound Mill Per dozen $9.00

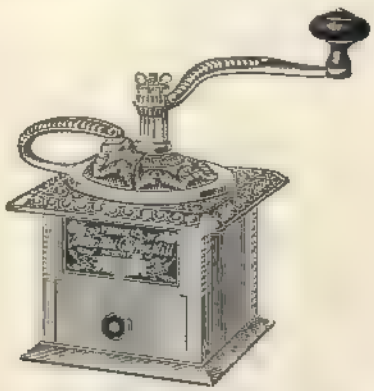
Half dozen in a Box.

NO. 331 AND 332
SUNKEN HOPPER, SLIDING COVER WITH HANDLE

Coppered Iron Castings.

No.	Dimensions, inches.	Per dozen
331 Medium	4¼ x 5 x 4¾	$13.00
332 Large	5¼ x 5¼ x 4½	14.00

Half dozen in a Case.



NO. 430, 431 AND 432
SUNKEN HOPPER, SLIDING COVER WITH HANDLE

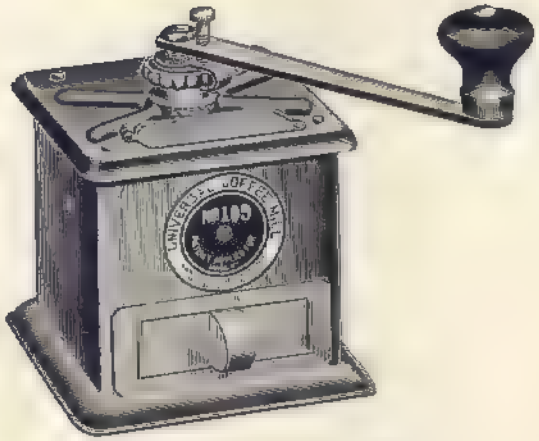
Coppered Iron Castings.

No.	Dimensions, inches.	Per dozen.
430 Small	4½ x 4⅛ x 4¼	$11.50
431 Medium	5 x 5 x 4¾	13.00
432 Large Top	5 x 5 x 4¾	14.00

Half dozen in a Case.

COFFEE MILLS

BOX



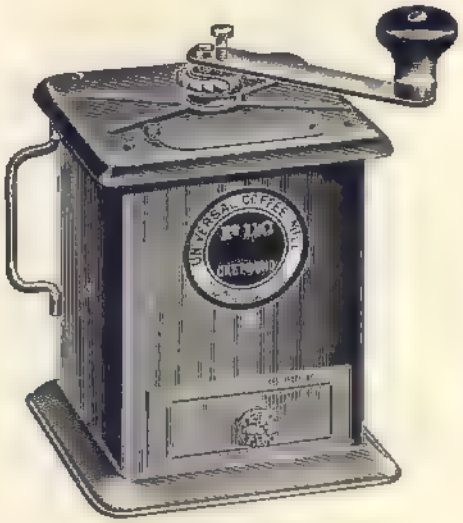
"UNIVERSAL," NO. 109

STEEL CASES, BLACK ENAMEL FINISH

Height, 6 inches. Patent Adjusting Device.

No. 109 "Universal"..... Per dozen $12.00

Half dozen in a Case.



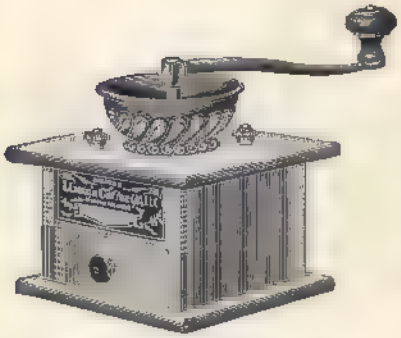
"UNIVERSAL," NO. 110

STEEL CASES, BLACK ENAMEL FINISH

Height, 8⅜ inches. Patent Adjusting Device.

No. 110 "Universal" ..... Per dozen $15.00

Half dozen in a Case.



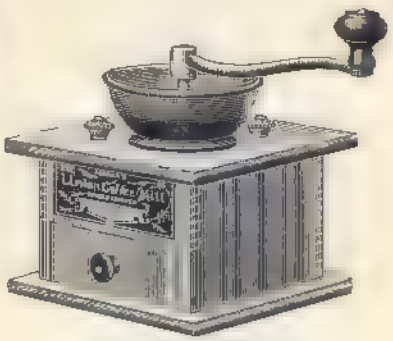
NO. 25

JAPANNED IRON HOPPER, DOUBLE GRINDERS

Dimensions, 6⅛x6x4¼ inches.

No 25 ..... Per dozen $15.00

Half dozen in a Case.



NO. 35 AND 45

BRITANNIA HOPPER, DOUBLE GRINDERS

Dimensions, 6⅛x6x4¼ inches.

No.		Per dozen.
35	Varnished Boxes	$17.50
45	Black Walnut Boxes	18.00

Half dozen in a Case.

"CROWN," NO. 1

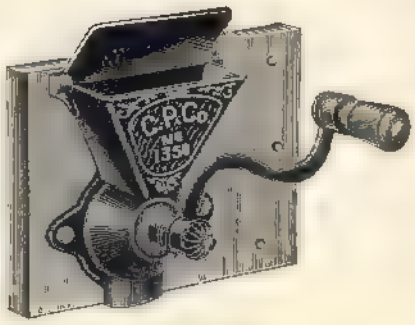
STEEL CASES, BLACK ENAMEL FINISH, BRASS SLIDING COVER

No.		Per dozen.
1	"Crown," 7x6x6 inches	$20.00

Half dozen in a Case.

COFFEE MILLS

SIDE



NO. 1350
CAST IRON

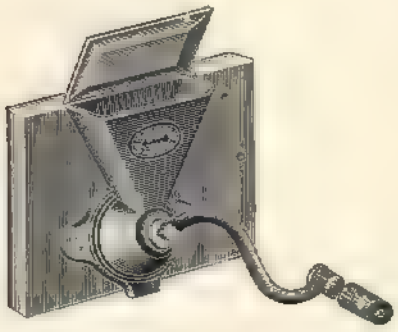
No. 1350 Japanned ..... Per dozen $5.00

One dozen in a Case

NO. 94
CAST IRON, SHEET STEEL HOPPER

No. 94 Japanned ..... Per dozen $4.50

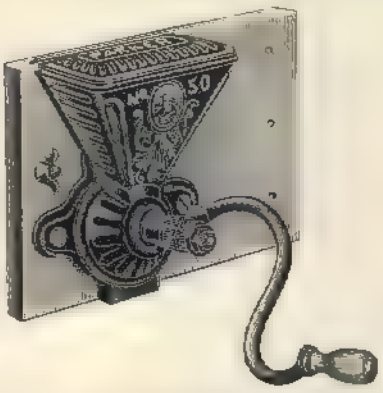
Half dozen in a Case.



NO. 134
CAST IRON, SHEET STEEL HOPPER

No. 134 Japanned ..... Per dozen $6.50

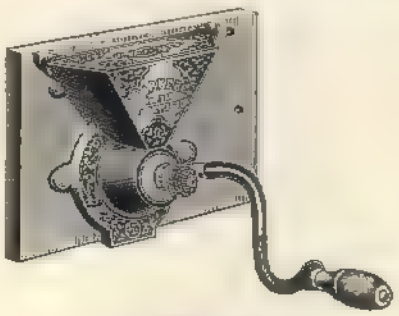
One dozen in a Case.



NO. 50 AND 60
CAST IRON, SHEET STEEL HOPPER

No. 50 Small Size, Japanned. ..... Per dozen $7 50
" 60 Medium " ..... " " 8 50

Half dozen in a Case.



NO. 350 TO 370
COPPERED IRON

No. 350 Small Size ..... Per dozen $8.00
" 360 Medium " ..... " " 9.00
" 370 Large " ..... " " 11.00

Half dozen in a Case.

COFFEE MILLS

SIDE

"EVER READY," NO. 2

Sheet Steel Canister and Cup, Japanned Wood Back. Holds one pound of Coffee.

No. 2 "Ever Ready" ..... Per dozen $7.00

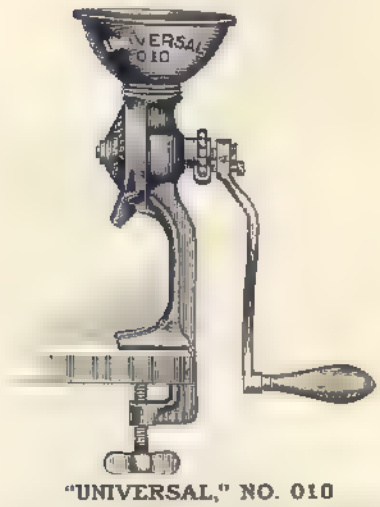
One in a Carton; three dozen in a Crate.

"MAHOGANY," NO. 8

Sheet Steel Canister and Cup, Japanned, Heavy Oval Glass Front, Wood Back. Holds one pound of Coffee.

No. 8 "Mahogany" ..... Per dozen $9.00

One in a Carton; one dozen in a Case.

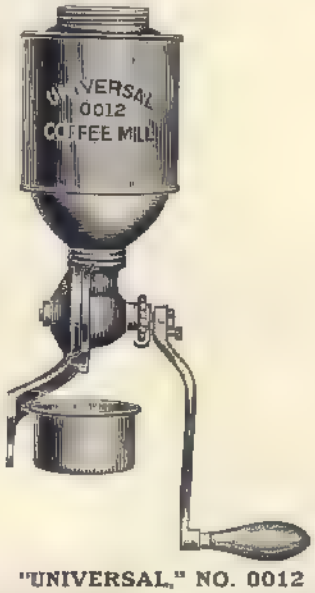


"UNIVERSAL," NO. 010

Sheet Steel Hopper, Black Enamel Finish. To Clamp on Table. Height, 11¼ inches.

No. 010 "Universal" ..... Per dozen $11.00

Half dozen in a Case.



"UNIVERSAL," NO. 0012

Sheet Steel Canister and Cup, Black Enamel Finish. To Screw on Wall. Height, 13¾ inches.

No. 0012 "Universal" ..... Per dozen $11.00

Half dozen in a Case.

"ENTERPRISE"

COFFEE MILLS

NO. 00

Capacity of Hopper, 4 ounces of Coffee. Grinds 6 ounces of Coffee per minute. Height, 9 inches. Weight, 6 pounds.

No. **00** ..... Each $1.25

Twelve in a Case.

NO. 0

Capacity of Hopper, 4 ounces of Coffee. Grinds 6 ounces of Coffee per minute. Height 11½ inches. Weight, 6 pounds.

No. **0** ..... Each $1.50

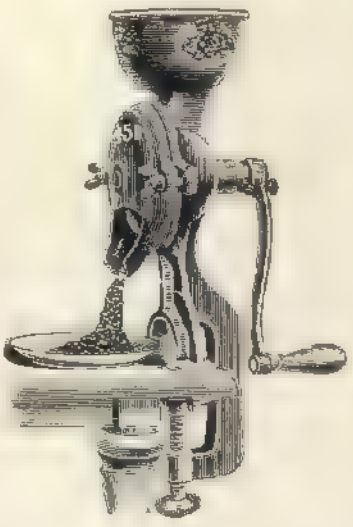
Twelve in a Case.

NO. 350

Capacity of Hopper, One Pound of Coffee. Grinds 12 ounces of Coffee per minute. Height 16⅝ inches. Weight, 17 pounds.

No. **350** ..... Each $3.50

Three or Six in a Case.



NO. 450

Capacity of Hopper, One Pound of Coffee. Grinds 12 ounces of Coffee per minute. Height, 21 inches. Weight, 19½ pounds.

No. **450** ..... Each $4.50

Three or Six in a Case.

GRANITOID OR CEMENT TOOLS—CONTINUED

NARROW JOINTERS OR GROOVERS

No. 9

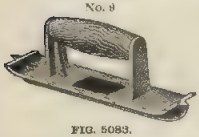


FIG. 5083.

Special grade Cast-iron, Nickel Plated, with burnished face; 3¾ in. varnished hardwood handle.

No. 10

FIG 5084

No. 9—Jointer or Groover; both ends rounded; face, 8 x 1¾ in.; height, 3¾ in.; cuts ½ in. deep ..... per doz., $10.00

No. 10—Jointer or Groover; one rounded and one flat end; face 8 x 1¾ in.; height, 3⅝ in.; cuts ½ in. deep ..... per doz., $10.00

FIG 5085

NARROW EDGERS

No. 11—Sidewalk Edger both ends rounded; face 8 x 1¾ in.; height, 3¾ in.; ¾ in. turned edge, with ⅜ in. radius ..... per doz., $10.00

No. 12—Sidewalk Edger; both ends rounded; face, 8 x 1¾ in.; height, 3¾ in.; 1 in. turned edge, with ¾ in. radius ..... per doz., $11.50

FIG. 5086

SQUARE EDGERS

No. 13—Square Edger; both ends rounded; face, 6 x 2¾ in.; height, 3¾ in.; 1¼ in. turned edge, square cornered for finishing edges of steps, carriage blocks, etc ..... per doz., $10.00

FIG. 5087.

RADIUS TOOLS

Radius Tools, used for laying out and finishing curves and circles where edgers cannot be used. Special grade Cast-iron, Nickel Plated, with burnished face; varnished hardwood handle.

No. 14—Radius Tool; length over all, 5½ in.. 1½ in. wide; 3½ in. handle; 1 in. turned edge, with ⅜ in. radius ..... per doz., $8.00

No. 15—Radius Tool. length over all, 5½ in.; 1½ in. wide, 3½ in. handle. 1¼ in. turned edge, with ¾ in. radius ..... per doz., $8.00

FIG. 5088.

RAISED (TUCK) POINTERS

Special Grade Cast-iron, Nickel Plated, with Burnished Concave Groove; 4½ inch Varnished Hardwood Handle, with Brass Ferrule; used for making a Raised Pointing or Beading on Cement Block, Brick or Stone Walls.

NO. 16—TUCK POINTERS, WITH GROOVE 4 3-4 INCHES LONG

Width of Bead or Groove .....in.	¼	⅜	½
Weight per dozen .....about lbs.	4	4	4
List price .....per dozen	$6.00	6.00	6.00

PLASTERING TROWELS

FIG. 5095.

No. 1—Handles are fastened by an improved method, fitting better to the hand and are not liable to come loose.

Size - inches	10 and 10½	11	11½	12
Per dozen...	$13.75	$15.25	$16.75	$18 50

No. 21—Basswood Handles.

FIG. 5096.

Size....in.	10 and 10½	11	11½	12	12½	13
Per doz.	$12.50	$13.00	$13.50	$14.00	.....	....

No. 22—Extra Walnut Handle.

Size. ..in.	10 and 10½	11	11½	12	12½	13
Per doz.	$14.00	$14.50	$15.00	$15.50	$16.50	$17.50

FIG. 5097.

No. 17—Made of highest crucible steel; tempered by improved method; accurately ground, extra thin blades. Fastened with seven rivets to long mounting, with shield. End of handle beveled for thumb rest. The strengthened post at end of handle prevents the mounting from bending when the trowel is used for work such as cementing, etc., where heavy pressure is used.

Size ... inches	10 and 10½	11	11½	12
Per dozen.....	$16.00	$16.50	$17.00	$17 50

No. 16—Same as above, but without reinforcing post.

Size ... inches	10 and 10½	11	11½	12
Per dozen.....	$15.00	$15.50	$16.00	$16.50

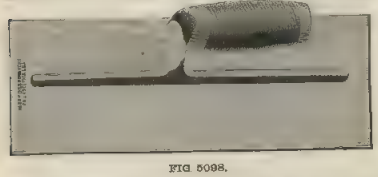


FIG 5098.

NO. 18—FINISHING TROWELS

LEATHER GRIP

Made of highest grade crucible steel, tempered by our improved method. Accurately ground, extra thin blade, fastened with ten rivets to extra long mounting, with shield. End of handle beveled for thumb rest. Leather grip. Tang extends through handle and is securely fastened with flush nut.

Size ... inches	11	11½	12
Per dozen.....	$20.50	$21.00	$21.50

COKE TROWELS

No. 80

FIG. 5105.

Size 9 inches.....per dozen, $8.00

No. 90

FIG. 5106.

Size 9 inches.....per dozen, $10.00

BRICK AND MORTAR HODS

FIG. 5107.

Hardwood body with wood side braces; steel strapped end board; round bolted ash handle, 4 feet long; wood shoulder piece or saddle, 10 inches long; body painted red; sides rabbeted; end board grooved into sides; all joints put together in white lead, making box water tight; handle is riveted to a forked iron standard, which holds box.

Wood Brick—With two projecting end rests or legs; body, 25 inches long, 7 inches deep, 10 inches across top; height over all 58½ inches; weight, per dozen about 120 pounds.

List..... .....per dozen, $15.00

Wood Mortar—Without end rests; body, 22 inches long, 10 inches deep, 13¾ inches across top; height over all 61½ inches; weight, per dozen about 145 pounds.

List ....per dozen, $18.00

Packed loose. Knocked down for shipment.

SALAMANDERS

We make Salamanders for heating cellars, buildings and contract work in course of construction—drying plaster and concrete, heating factories, etc., for burning paper, rubbish and disposing of garbage.

A bar inserted through the two holes at the top permits the Salamander to be easily moved while a hot fire is burning therein.

Standard sizes are of 1-16 inch steel, 18 inches in diameter; length of shell, 2 feet; total height, 3 feet.

They are finished with a complete set of grate bars, same as an upright boiler.

Price $6.00

FIG 5108.

GRANITOID OR CEMENT TOOLS

WIDE JOINTERS OR GROOVERS

No. 1

FIG. 5076.

No. 2

FIG. 5077.

Highest grade bronze metal, with burnished face; 3¾ inch rubberoid finish hardwood handle.

No. 1—Jointer or Groover; both ends rounded; face, 6x2¾ inches; height, 3 inches; cuts ¼ inch deep; weight, per dozen about 17 pounds.

Per dozen..... $18.00

No. 2—Jointer or Groover; one rounded and one flat end; face, 6x3 inches; height, 3 inches, cuts ¼ inch deep; weight, per dozen about 17 pounds.

Per dozen..... $24.00

Jointers used for grooving walks or driveways.

WIDE EDGERS

No. 4

FIG 5078.

No. 5

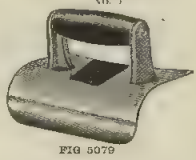


FIG 5079

Highest grade bronze metal, with burnished face; 3¾ inch rubberoid finish hardwood handle.

No. 3—Sidewalk Edger; both ends rounded; face, 6 x2¾ inches; height, 3 inches; ¾ inch turned edge, with ⅝ inch radius; weight, per dozen about 16 lbs.

Per dozen . $18.00

No. 4—Sidewalk Edger; both ends rounded; face, 6x3 inches; height, 3¾ inches; 1 inch turned edge with ¾ inch radius; weight, per dozen about 17 lbs.

Per dozen..... $21.00

No. 5—Curbing Edger; face, slightly convex; face, 6x3½ inches; height, 4¼ inches, 2 inch turned edge, with 1½ inch radius; weight, per dozen about 20 lbs.

Per dozen $36.00

Edgers used for finishing edges of walks or curbing.

CORNER TOOLS

FIG. 5080

Highest grade bronze metal, with burnished face; 4 inch rubberoid finish hardwood handle.

No. 6—Corner Tool; one straight and one beveled end; face, 6 inches; 1½ inches wide on each surface; height, 3 inches; weight, per dozen about 15 lbs.

Per dozen..... $23.00

Corner Tools used for finishing the corners of steps, etc.

ROLLERS

No. 7

FIG. 5081.

No. 8

FIG. 5082.

Highest grade bronze metal, 10 inches wide, 4 inches in diameter; malleable iron handle brace. 10½ inches wide; 1⅜ inch varnished hardwood handle 14 inches long.

Rollers used for roughening and ornamenting walks or driveways.

No. 7—Driveway Roller or Groover; with ribs 2 inches apart, for making ¼ inch grooves in driveways to prevent slipping; weight, each about 8½ lbs.

Each $14.00

No. 8—Indentation Roller; face thickly studded with ⅜ square teeth for imprinting surface of walks, steps, etc., to prevent slipping, weight, each about 10 lbs.

Each..... $16.00

BRICK TROWELS

No. 5. London Pattern

FIG. 5099.

No. 10. Philadelphia Pattern

FIG. 5100.

Size . . . . . inches	7⅞	8	8½	9	9⅝	10	10½
No. 5. . . . . per dozen	$7 50	$8 00	$8 50	$9.00	$9.50	$10 00	$10 50
" 10. . . . . "	8.50	9.00	9.50	10.00	10.50	11.00	11.50

Size . . . . . inches	11	11½	12	12½	13	13½	14
No. 5. . . . . per dozen	$11.00	$11.50	$12 00	$12.75	$13.50	$14.25	$15.00
" 10. . . . . "	12.00	12.50	13 00	13.75	14.50	15.25	16.00

The Philadelphia Pattern is made with handles at three different heights.

No. 11. N. Y.

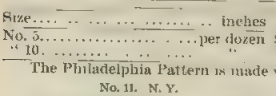


FIG 5101.

N. Y. BRICK TROWELS

Extra quality crucible cast steel, carefully hardened and tempered; ground to a true and correct taper. The lift or hang of handle is just right. Through riveted tang.

Size . . . . . inches	7½	8	8½	9	9½	10	10½
Per dozen.	$9 50	10 00	10.50	11 00	11 50	12 00	12.50

Size . . . . . inches	11	11⅛	12	12½	13	13½	14
Per dozen.	$13.00	13.50	14.00	14.75	15.50	16.25	17.00

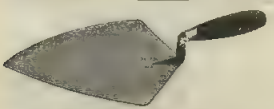


FIG 5102.

N. Y. BRICK TROWELS

With leather or "Sure Grip" handles.

Size . . . . . inches	7⅞	8	8½	9	9⅝	10	10½
No. 011. "Sure Grip". . . . . per dozen	$11.50	$12.00	$12.50	$13 00	$13.50	$14.00	$14.50
" 111. Leather. . . . . "	12 00	12.50	13.00	13.50	14 00	14.50	15.00

Size . . . . . inches	11	11⅛	12	12⅛	13	13⅛	14
No. 011. "Sure Grip". . . . . per dozen	$15.00	$15.50	$16.00	$16.75	$17.50	$18.25	$19.00
" 111. Leather. . . . . "	15.50	16.00	16 50	17.25	18.00	18.75	19 50

FIG. 5103.

NO. 15. POINTING TROWEL—REGULAR

Size . . . . . inches	4	4½	5	5½	6
Per dozen.	$4.25	4 80	4 75	5 00	5.25

FIG 5104.

BRICKLAYERS' NO. 17. POINTING TROWEL

Per dozen. $5.25

GRANITOID OR CEMENT TOOLS—CONTINUED

ROLLER JOINTERS OR GROOVERS

FIG. 5089.

Special grade cast iron, nickel plated, with burnished face; 4½-inch varnished hardwood handle; handle bracket 3⅛ inches long.

No. 17—Roller jointer; cylinder 2 inches long, 2 inches diameter; cuts ⅛ inch deep.

Per dozen $18.00

ROLLER EDGERS

FIG 5090

No. 18—Roller edger; cylinder 2 inches long, 2 inches diameter. ¼-inch turned edge, with ⅜-inch radius.

Per dozen $18.00

No. 19—Roller edger, cylinder 2 inches long, 2 inches diameter; 1-inch turned edge, with ¾-inch radius.

Per dozen 18.00

GUTTER TOOLS

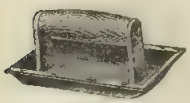


FIG. 5091.

Special grade cast iron, nickel plated with burnished convex face; 8¾-inch varnished hardwood handle.

For making gutter for drainage in walks, cellar floors, etc.

No. 20—Gutter tool; one end rounded; curve face, 6x8⅜ inches; height 3¼ inches; makes gutter 3½ inches wide, 1 inch deep.

Per dozen $14.40

CURB-GUTTER FINISHING TOOLS

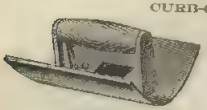


FIG. 5092

For finishing the curve formed in making a combined curb and gutter.

No. 21—Curb-gutter tool; ends slightly rounded; curved face, 6 inches long, with 3-inch sides.

Per dozen $14.40

TAMPERS OR RAMMERS

No. 22

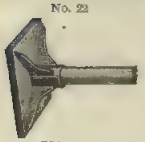


FIG. 5093.

STANDARD, CAST IRON

Cast iron 1⅛-inch thick, plain finish, with four strengthening ribs, and socket 4 inches deep; complete with 4-foot hardwood handle.

No. 22— 8x 8-inch face...each, $4.00
No. 23—10x10 " " ... " 6.00

No. 24

FIG. 5094.

STANDARD, STEEL

Steel plate ⅞ inch thick, riveted to heavy malleable iron collar or socket 5 inches in diameter, 1⅝ inches deep; complete with 1 foot hardwood handle.

No. 24— 8 x 8-inch face ....each, $3.00
No. 25—10x10 " " ..... " 4.50

Used for tamping down the cinder and concrete foundations before surfacing.

transmit full engine power on the maximum speed reduction. The same is the differential which is of the very satisfactory spur gear type. The small bevel gear runs on annular ball bearings and the thrust is taken up by an adjustable thrust bearing. Timken roller bearings are used to carry the large bevel gear and the differential and the jack shafts. The outer ends of the jack shafts run also on Timken bearings and carry the drive pinion. The latter is of 4 diametral pitch and 2 inch face. This mechanism is enclosed. The differential case has two tubular extensions in which the jack shafts are housed. There is absolutely no strain from the load of the vehicle on this important part of the car. The dead rear axle is there to carry the weight. This axle is a forging of high grade axle steel and has a 2½ in. square section turned down at the ends and thus forming the wheel spindles. Timken bearings fit on these spindles which are 2 in. at the large and 1¾ in. at the small diameter. On each end is pressed a spider shaped casting which serves various purposes. It supports the differential axle; it forms the spring seats and the emergency brake anchor; it also has at the lower end a hub of 8 in. length in which the torque and radius rod is inserted. The two radius rods unite towards the middle of the car in the center in a single ball joint, thus giving the rear axle all the freedom of motion required when traveling over even the roughest roads.

Front Axle and Steering Mechanism.

The front axle of this car is of the reversed Lemoine type, which arrangement has the advantage of allowing a comparatively low axle, thereby avoiding the bend in the center of the axle which is necessary to clear the engine case. The vertical part of the steering knuckle is supported by two large Timken bearings making a loose spindle impossible on account of the tapered construction of the bearings, the wear on which can be taken up by an adjustment nut. The axle itself is of seamless steel tubing, and the two axle heads are of manganese bronze. All steering arms are of ample size and all joints are bushed. Grease cups are provided on all joints. The steering gear is of the satisfactory worm and sector type. It is provided with take up adjustments for all bearings. The latter are of the Timken roller type.

Brakes.

Two sets of independent brakes are employed. The emergency brake acts on the rear wheel brake drums. They are 14 in. in diameter and 3 in. wide, and are lined with raybestos. These brakes are operated by a hand lever with a ratchet lock. The very powerful service brake is controlled by a pedal. It acts on a brake drum which is connected to the differential drum. It is of the self compensating shoe type, and is provided with an adjustment device which makes the adjustment of the brakes a matter of a few seconds.

Frame.

The frame side members are standard steel channels of 5 in. medium weight section. At the rear end there are two large gusset plates extending clear across the frame. These gussets are the main stays of the frame, and keep it rigid against strains in the longitudinal direction. At the forward end of the frame is a cross member to which the radiator and the starting crank bracket are secured. Immediately behind this there is a drop member supporting the forward end of the power unit. The rear end of this unit is supported by a ball joint which rests on a second heavy cross member, which also forms the anchor joint for the radius and torque rod. All springs are semi-elliptical. The front springs are 44 inches long and 2½ inches wide. The rear springs are extremely long —measuring 54 inches, and are 2½ inches wide.

COMMERCIAL VEHICLE NOTES.

The Interstate Auto Trolley Co., which has a capital of $50,000, plans to establish an automobile line connecting the various villages along the south side of Long Island.

Plans have been completed for an auto mail service in San Francisco, Cal., between the main office and stations H, G, M, O, A, and the Presidio. The new service will enable trips which formerly took an hour to be made in 20 minutes.

An automobile freight and passenger line is proposed between Bowling Green and Scottsville, Ky., between which there is no railroad.

The Auto Delivery Co., which was organized with a capital of $25,000, has purchased ten White gas cars and two White gas trucks as the initial equipment for the parcel delivery system which they are establishing in Portland, Ore.

A new automobile fire engine has been placed in service in St. Louis, Mo. It carries seven men, and, it is stated, responds to more alarms than any two companies in the city.

The Fort Chester, Yonkers, Peekskill and White Plains (N. Y.) fire departments are all equipped with motor fire apparatus, which has given excellent service on the high hills in that part of the country.

Maysville, Kentucky, has decided to install motor fire apparatus at a cost of $5,000.

The motor mail wagon which Saginaw, Mich., has been using, has given such satisfaction that two more machines are to be purchased.

The Anderson Carriage Co., of Detroit, Mich., is building an addition to their plant It will be of reinforced concrete, 300 by 800 feet, three stories high, and will be used in making electric business vehicles of from 1000 pounds up.

The Metzger Motor Car Company has bought 40 acres of ground at the junction of Hamilton Boulevard and the Detroit Terminal Railway, on which will be erected a series of buildings for the manufacture of Hewitt trucks.

the clutch an impossibility. To increase the friction area these shoes and the driving clutch ring are provided with a number of V shaped grooves, which feature reduces the pressure per square inch of friction area, thereby giving long life to the friction surfaces. The running of this whole mechanism in oil also helps to increase the life of all clutch parts. The claims for this clutch are: long life, easy engaging action, positive disengaging action and selfadjustability and a small inertia when disengaged.

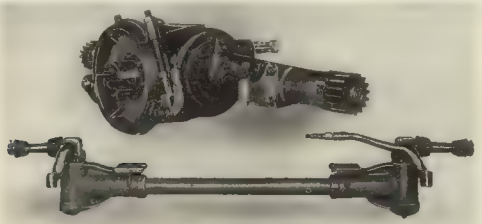
No-Direct Drive Change Gear.

The speed change arrangement is of the sliding gear progressive no-direct drive type and has a capacity of three forward speeds and one reverse. The main shaft to which the driven clutch member is secured, carries four gears of different size which are all keyed to the shaft. These gears can be brought progressively in mesh with corresponding gears on the countershaft. These latter gears form a gear train and slide on the counter-shaft and are operated by a fork and drag link. The advantages claimed for this system are: fewness of parts; the absence of telescoping or divided shafts, without which a direct drive transmission cannot be obtained; impossibility of several gears meshing simultaneously; never more than one gear in mesh when driving, therefore giving on all speed reductions equal efficiency, while the direct drive transmission drives through two sets of gears when not direct, thereby losing twice the power; also, simple operation and less possibility of mistake and damage by the driver. The operator cannot however mesh the high speed gears without shifting through second speed. He also cannot shift from neutral to reverse without shifting through the low, and there is some increase in weight on account of increased length.

The transmission shafts are made from the best chrome-vanadium steel and are of extremely liberal dimensions. The gears are of a high grade nickel low-carbon steel, properly heat treated, case hardened and ground to size. A 5 diametral pitch is used and the high speed gears have a face of 1¼ inches, while the gear faces of the second and low speed gears are 1⅝ inches and 1½ inches respectively. Both transmission shafts run on annular ball bearings.

Differential, Drive and Rear Axle.

At the rear end of the transmission countershaft is a large universal joint. The



Front and Rear Axles.

Fig 6. The front axle is of heavy tubing, a manganese bronze casting of reversed Lemoine type is applied at the ends. The vertical steering knuckle is supported on two large Timken roller bearings.

mate to this is located on the bevel gear shaft in the differential housing. A 1½ inch drive shaft, which forms a straight line when the truck is under load, connects the two universal joints. Although the drive is through a cardan, it must not be compared with the so-called bevel gear drive. As stated above the drive is of the internal gear type, which may be easily understood by the following comparison. Imagine the differential and jack shaft housing with contents of a double chain drive car, move this unit to the rear axle and fasten it thereon, do not secure it to the center of the axle but a certain distance—say 4½ inches out of the wheel center. Then take the chains and sprockets away and replace the small sprocket by a small spur pinion—say 5 inches in diameter—and the large sprocket by a large internal gear, which is—just like the sprockets by means of the chain in constant mesh with the spur pinion. Then this whole mechanism is enclosed and works in grease. This gives an idea of the principle involved. The bevel gears are of liberal size—designed strong enough to

The Mais Motor Truck

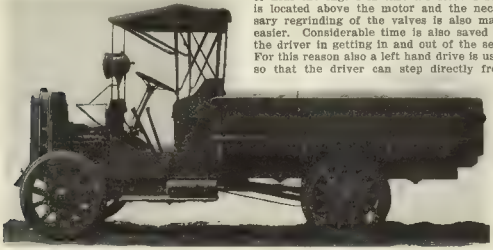
By D. E. Scriber.

In the design of this 3000 to 4000 lb. heavy delivery truck by the Mais Motor Truck Company, Peru, Ind., many new and novel features are incorporated and are here described and illustrated for the first time.

Two experimental cars have been on the road for several weeks and it is claimed that the first one was run in three weeks 2400 miles. The company intends to manufacture not more than 350 cars for the 1911 season.

The engine is easily accessible, an advantage, for as long as we do not revolutionize our present systems, we will have to clean spark plugs. Other small attentions which must be given to even the best motor are easier done by removing the hood than lifting up floor boards and small covers.

This arrangement does not obstruct the accessibility of the engine by hand levers, pedals, bell cranks and other diverse operating mechanism, which must be placed over or near the engine in case the driver's seat is located above the motor and the necessary regrinding of the valves is also made easier. Considerable time is also saved by the driver in getting in and out of the seat. For this reason also a left hand drive is used so that the driver can step directly from



The Mais Motor Truck.

Fig. 1. This new truck embodies many unique features, such as spur gear drive, sliding gear change speed without direct drive, adjusta ble parts housed and locked to prevent tampering by the drivers. Unique V-grooved shoe clutch, etc., as described in the text.

Alb. F. Mais, chief engineer and designer for the company has had an extended experience in the automobile industry and especially with all types of foreign commercial vehicles.

The general arrangement shows an engine under a short hood in front of the driver's seat. The main objection to this arrangement is the loss in loading space, which loss has to be made good by a somewhat longer wheel base and more of an overhang of the load over the rear wheels. The longer wheel base is objectionable but the placing of the load over the rear wheels is an advantage, giving increased tractive power which is very favorably felt in bad weather and deep snow. Many find objection in the supposed increased tire wear on the rear tires, but the makers claim there is no foundation for such an objection stating that they know that the loss of rubber in all the tires together in pounds per 1000 ton miles stays constant regardless of the load distribution. Another great advantage of placing the load over the rear wheels is that the steering of the vehicle is easier and the wear and tear on the many necessary steering joints is immensely decreased.

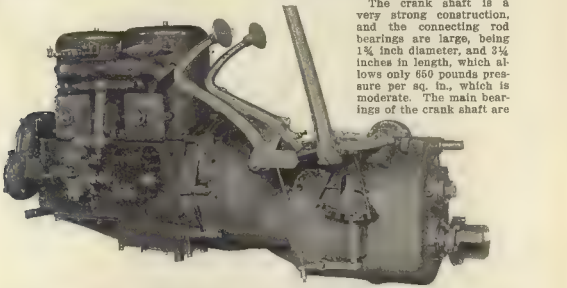
the car on the side-walk and vice versa, and in passing other vehicles he has a better outlook for his clearance.

The power plant is composed of the engine, clutch and transmission. All pedals, hand levers and control mechanisms are connected to this power plant, which is supported in the frame by means of the three point suspension system. This unit can be replaced by a similar unit in a few hours, thereby keeping the truck on the road in case of repairs or a general overhauling.

The only drives at present used in this country are the shaft and the double chain drives. The double chain drive when properly designed, is a mechanically correct proposition. But many things are mechanically correct but lack efficiency. This is the case with the double chain drive.

The drive through properly lubricated chains represents a power loss of 12 per cent. according to the best authorities. But are driven chains on a truck properly lubricated? In Europe they are using the worm drive and the internal gear drive. In fact the most successful trucks are internal gear driven. Such firms as the Daimler Motoren Gesellshaft in Germany, the De Dion Bouton

Company in France, the Milnes Daimler Company and the Riknield Company in England are now driving their trucks exclusively with gears instead of chains. For these and many other reasons the Mais truck is gear driven. The drive mechanism is again a distinctive unit composed of the rear axle, rear wheels, differential axle and internal gear driven arrangement. The same as the power unit this drive unit can be replaced by a square unit in case of a break-down or a general overhauling, so that the truck may continue its road work without delay.



Mais Truck Unit Power Plant.

Fig. 2. The cylinders are cast in pairs, surrounded by a single water jacket, which is extended to the crank case and forms a housing for the valve lifting mechanism. The motor has four cylinders although from the construction of the jackets it has the appearance of two large cylinders. Hand hold plates make the valve mechanism accessible. The gear shift lever and pedals are mounted on the unit which is three point suspended in the frame.

A third unit may be found in the front axle and a fourth one in the frame. These different units are connected together by suitable arrangements.

Engine.

The engine itself is of the four cycle four cylinder "T" head type and has a bore of 3⅞ inches and a stroke of 5¼ inches, being of the long stroke type. The makers believe that for a truck the points in favor of the long stroke motor outweigh by far the few disadvantages which principally are: Increased weight and increased piston speed for the same number of revolutions. Increased weight affects a truck very slightly and the increased piston speed does not seriously affect the truck motor because it runs at lower speed than the pleasure car high speed engine. The advantages of a long stroke motor are numerous. For a given power the pressures caused by the explosion of the gases are less, thereby subjecting the connecting rods, crank shaft and all bearings to less stress. Greater benefit is derived from the expansion of the gases thereby reducing fuel consumption. There is less piston diameter for a given charge which results in less leakage. The ability to run smoothly at extremely low engine speed is increased and there is a saving of fly wheel weight on account of the increased crank leverage and later angular opening point of the exhaust valve. A bore of 3⅞ and a stroke of 5½ in. makes the engine one of the conservative long stroke class. This motor delivers 24 H. P. at 900 revolutions per minute and allows a good amount of reserve power at higher speeds.

The crank shaft is a very strong construction, and the connecting rod bearings are large, being 1¾ inch diameter, and 3¼ inches in length, which allows only 650 pounds pressure per sq. in., which is moderate. The main bearings of the crank shaft are F. & S. annular ball type. The connecting rod bushings are die castings, of Parson's white bronze. The wrist pin is secured to the connecting rod by a liberal sized set screw. The hardened and ground pin is 1½ inches in diameter, and has its bearing in the piston bosses, thus giving a bearing surface of hardened steel against cast iron, there being from 30 to 40 per cent. more area than found on the usual type of bushed pin. The connecting rod 11½ inches in length is more than twice the stroke. Its length decreasing the angularity of the rod and reducing to a minimum wear on the pistons. The pistons themselves are 6 inches long, and fitted with three eccentric expansion rings at the upper end. The wrist pin is located 3¼ inches from the top of the piston. Liberal proportions are also found throughout the various parts of the motor. The cam and magneto shaft gears are of 10 diametral pitch and 1½ inches face, and as usual run in an oil bath. The cam shafts are 15-16 inch in diameter with ¾ inch

width cams which work on rollers 1⅛ inches in diameter and ¾ inch in width. The push rods to which these rollers are secured, are 1⅜ inches in diameter, and have a phosphor bronze bearing 3 inches long. These rods are hollow, making them light in weight. The clicking noise of the valve mechanism is further reduced by interposing a hardened steel plunger, and a small spring between the valve stem and the push rod.

The T head cylinder allows the use of valves 2 inches in diameter in the clear with a lift of 11-32 of an inch and permits of a cooling water space all around it, thus

The crank case is unsplit, the crank shaft being introduced from the fly wheel end. An extremely large bottom cover allows for assembling and refitting the connecting rod bearings. The parts are really very accessible, considering that all moving parts are enclosed.

The rear part of the crank case forms half of the fly wheel housing, while the other half is furnished by the clutch and transmission housing. This latter is also solid and not split and bolts to the crank case at the large section around the fly wheel. No fan is used

Inlet Side Mais Motor.

Fig 3. This view shows the mounting of the carburetor and the Y intake manifold which supplies the four cylinders, which are of T type, although this does not show on account of the water jackets. An auxiliary magneto is mounted as shown and driven from the half-time gear train at the front. The regular magneto is similarly mounted on the other side. Two magnetos being used, instead of a single magneto and storage or dry cells

reducing overheating, warping and necessity for frequent regrinding. The large diameter and liberal lift give an exceedingly low gas speed; 100 feet per second at 850 R. P. M. This insures a full fuel charge.

To prevent tampering with the valve adjustment by the drivers, the entire valve mechanism is enclosed at the side by a housing with locked door, key to which is kept in the possession of the owner or head mechanic. This same innovation is found in several other places, in order to do away with minor troubles often caused by the drivers. Enclosing these various parts protects them from dust.

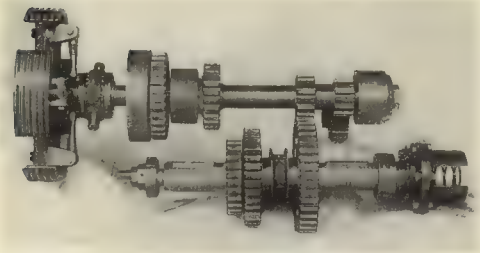
The cylinders are cast in pairs, and are finished by grinding, The cooling jacket is carried down to the cylinder flanges. The extended portion forming the valve gear housing, giving the cylinders a massive appearance at the base.

Cooling System.

A larger radiator than usual is fitted, and has incorporated in it a seven gallon overhead tank. Circulation is maintained by a gear pump of 8 gallons per minute capacity at 800 R. P. M. With this outfit, it is claimed no fan is necessary.

The gears and the pump housing are of phosphor bronze, and are of 8 pitch and 2½ inch face. The neat 1½ inch water pipes of Y design are shown in the photographs. Water enters below the exhaust valves, and leaves through a 1¼ in. pipe on the opposite side above the inlet valve.

A Bosch high tension magneto forms the regular ignition equipment. The spark is fixed so that unskilled drivers cannot injure the running of the motor by an improper setting of the spark lever. The engine is also provided with complete driving and attaching devices for a second independent high tension magneto to be connected to a



Mais Sliding Gear Transmission and Clutch.

Fig. 4. The clutch consists of four expanding metal shoes, the surface of which consists of V grooves. The engaging or disengaging action is radial therefore positive. The change speed gears are of sliding gear type, progressively operated, but do not have a direct drive, the low speeds being equally as efficient as the high speed. There are three speeds forward and one reverse

seperate set of plugs. This dual system it is believed by the makers, produces the most reliable ignition system.

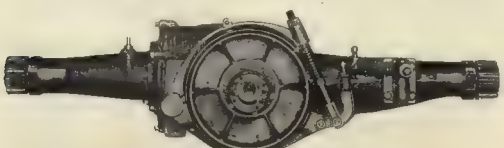
Lubrication.

The lubrication of the motor is automatic and sufficient oil is carried for 200 miles of average running. A pressure gauge on the dash shows the driver when the oil tank needs filling, but not only that, it shows also any disturbance or irregularity in the oiling system. Failing of the oil pump is practically an impossibility as it has only four moving parts, namely: eccentric, eccentric strap, plunger and discharge valve. The inlet of the oil to the pump is by means of a port. The pump delivers the oil through a filter into the distributing line, which distributes the oil to the four oil troughs inside the crank case, keeping these always full. The connecting rods then complete the lubrication of all engine parts by splash. The oil is circulated in the system at a rate of one-half gallon per minute at 800 R. P. M. The overflowing oil returns to the oil case to be filtered and reused.

An automatic carburetor of the company's own design, having three gasoline jets is used. It is said to be very saving in fuel and makes starting easy.

Expanding Shoe Clutch.

The Mais clutch is by no means a revolutionized invention but embodies a number of advantages especially desirable for a commercial car. It is of the internally expanding shoe type. Four phosphor bronze shoes, which are guided by four cylindrical extensions of the driven clutch member, press outwardly against the driving cast iron clutch ring, attached to the fly wheel. Four coil springs contained within these cylindrical extensions cause this outward pressure. By suitable lever arrangements and the usual sliding sleeve these shoes can be drawn from the driving clutch ring This disengaging action is radial and therefore positive; hence making dragging of

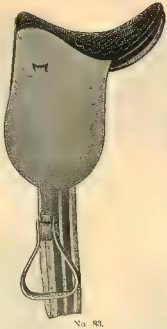


Mais Rear Axle Unit

Fig. 5. The drive is of internal gear type The gears at the end mesh with large internal gears on the rear wheel, and run in lubricant. The rear axle proper is of dead type, all torque being transmitted by the live shafts carrying the small spur gears.

Riding Saddles

No. 82

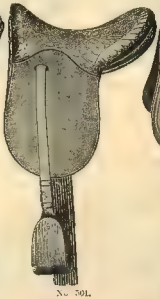


No. 83.

No. 95

		Each
No. 82—Somerset Saddle.	Plain Kip Seat	$ 5 00
No. 83— " " "	Russet Skirts, Plain or Quilted Calf Seat	6 00
No. 95—Kilgore Saddle.	Tree, 17 x 19 inches; Hogskin Skirts, Plain Kip Seat, Cloth Pad with Leather Facing	10 00

No. 510.



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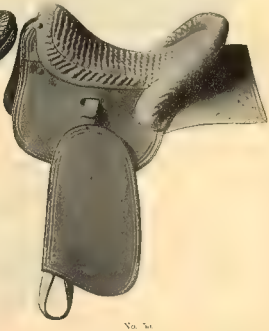


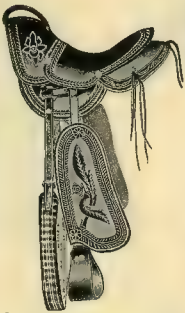
No. 55

		Each
No. 510—Kentucky Spring Seat.	16½-inch Tree, Hogskin Impression Skirts, Silk Stitched, Hand Raised Calf Seat, Sheep Skin Pad, Job's Cloth Lined, Corded Girth, 4-inch Stirrup	$17 00
No. 501—Imitation Spring Seat.	16-inch Tree, Hogskin Impression Skirts, Silk Quilted Calf Seat, Sheep Skin Pad, Osnaburg Lined, 4-inch Leather Stirrups, Corded Girth	14 00
No. 55—Cumberland Saddle.	14 inch Tree, Calf Seat, Silk Stitched Fenders, 15¾ x 9¾ inches, 1¾ inch Stirrup Leathers, 5-inch Stirrups, Corded Girth	20 00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Riding Saddles

No. 6.



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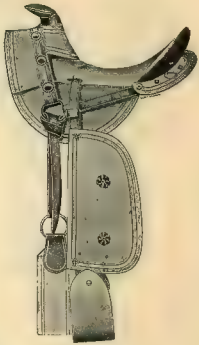
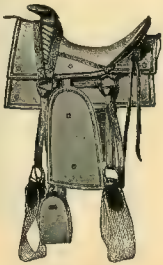


No. 2113

		Each.
No. 6—Morgan Saddle.	Horn or Muly. Fair Leather.....	$4 00
No. 20— " "	Muly only. White or Russet Leather.....	9 00
No. 2113— " "	Full Covered Tree, Lined Bars, Round Skirts, 4-inch Wood Stirrups.....	9 00

No. 2116.



No. 304.

No. 19.

		Each.
No. 2116—Morgan Saddle.	Full Rigged. Two Girths, 1-inch Stirrup Leathers, Leather Covered Bars	$10.00
No. 304— " "	" " Full Underskirt, Two Girths, 1-inch Stirrup Leathers.....	13.00
No. 19— " "	Three-quarter Rigged, Hide Covered Tree.....	7.00

Riding Saddles

No. 305.

No. 307

		Each
No. 305—Texas Saddle.	Morgan Tree, Full Covered, 1¼-inch Stirrup Leathers	$14 00
No. 307— " "	15-in. Tree, Felt Lined Skirts, 2-in Stirrup Leathers, Laced, 1¾-in. Tie Straps	32.00

No. 64.

No. 66.

		Each.
No. 64—McClelland Saddle.	16-inch Tree, Hide Covered, with Brasses Extra Size Harness Leather Skirts, 3-inch Covered Stirrups, 1-inch Stirrup Leathers, 1-inch Tie Straps, 4-inch Girth	$14 00
No. 66—McClelland Saddle.	16-inch Tree, Full Harness Leather Covered, with Brasses. Extra Size Harness Leather Skirts, Covered Stirrups, 1¼-inch Stirrup Leathers, 1¼-inch Tie Straps. . .	18 00
	Fair Leather. Otherwise same as No. 66.	20.00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

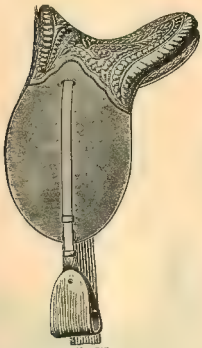
Riding Saddles

Nos. 45 and 48.

No. 49

		Each.
No. 45—Texas Saddle.	14-inch Steel Fork Tree, Felt Lined Skirt, 22½ x 10½ inches. Fenders, 15 x 8¼ inches; 1¾-inch Stirrup Leathers, 4 inch Hair Girth	$21.00
No. 48—Texas Saddle.	14-inch Steel Fork Tree, Felt Lined Skirt, 22½ x 11 inches Fenders, 15 x 8¼ inches; 2-inch Stirrup Leathers, 4-inch Hair Girth	26.00
No. 49—Texas Saddle.	14-inch Steel Fork Tree, Felt Lined Skirt. Fenders, 13½ x 8¾ inches; 1½-inch Stirrup Leathers, 20 Strand Cotton Girth	18 00

Riding Saddles



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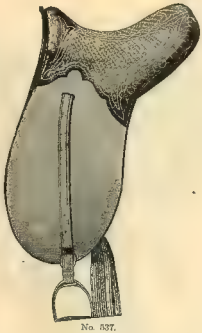


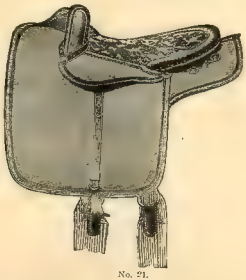
No. 537.

Each.

No. 515—Kentucky Spring Seat. 16½-inch Tree, Hogskin Impression Skirts, Calf Seat, Silk Stitched, Hand Raised, Sheepskin Pad, Cloth Lined, 1⅛-inch Stirrup Leathers, 5-inch Stirrups.. .. $20.00

No. 537—Kentucky Spring Seat. 16½-inch Tree, Hogskin Impression Skirts, Silk Stitched, Hand Raised Calf Seat, Cloth Lined Sheepskin Pad, 1¼-inch Stirrup Leathers, Iron or Wood Stirrups..... 25.00

No. 20.



No. 21.

No. 20—Side Saddle. 17½ inch Tree, Morgan Side, Enameled Cloth, Plush or Carpet Seat, Cloth Lined Pad, Padded Bars, Fancy Cotton Surcingle ..... $ 9.00

No. 21—Side Saddle. 17½-inch Tree, Morgan Side Seat, Leather Bound Carpet Cantle, Cloth Lined Pad, Padded Bars, Fancy Cotton Surcingle.. 12.00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

LUMBER TRUCKS FOR WOOD RAILS

BEST DESIGNS. BEST FLANGES.

This shows the plain lumber truck wheel. Made of good gray iron. This wheel furnished for either round or square axle.

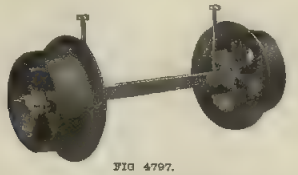


FIG 4797.

PRICE PER TRUCK OF 4 WHEELS

And either 2 square axles or 2 round axles and 4 solid cast-iron boxings.

Diameter of Wheel, Inches	Size of Axle, Inches	Kind of Wheel, Standard Face of Wheel, Inches	Approx. Weight of each Wheel, Pounds	List Price, Truck for 36 in. gage	Extra cost per truck for each extra inch of gage	Extra cost per truck for each ½ inch wider face of wheels	Approx. shipping weight of truck for 36 in. gage, Pounds
14	1¾	5	90	$28.80	$0.10	$0.54	430
14	2	5	94	31.64	.12	.54	475
14	2⅛	5	98	35.32	.14	.54	520
14	2⅜	5	102	39.12	.18	.54	560
15	1¾	5	120	36.00	.10	.60	550
15	2	5	224	38.84	.12	.60	590
15	2⅛	5	128	42.32	.14	.60	640
15	2⅜	5	132	46.32	.18	.60	680
16	2	5⅛	134	41.24	.12	.70	600
16	2⅛	5⅛	138	44.44	.14	.70	650
16	2⅛	5⅛	140	48.24	.18	.70	700
18	2	5⅛	140	42.68	.12	.80	650
18	2⅛	5⅛	144	46.36	.14	.80	700
18	2⅛	5⅛	148	50.16	.18	.80	750
20	2	6	156	46.52	.12	1.00	720
20	2¼	6	160	50.20	.14	1.00	770
20	2⅜	6	164	54.00	.18	1.00	800

LIBERAL DISCOUNTS ON APPLICATION

LOGGING CARS COMPLETE

Logging and Engine Wheels for wood or Steel Rails.

Pole Road Wheels and Axles, etc.

WRITE FOR PRICES

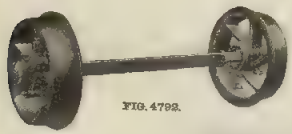


FIG. 4793.

SQUARE AXLE TRUCK STYLE C

WHEEL STYLES 1 OR 2
(SEE PAGE 1374)

PRICE OF CAR TRUCK

Each consisting of 4 Self-Oiling Wheels and 2 Square Axles. Axle Straps not included. Wheels and Axles are thoroughly machined.

Size of Axle, Inches	Wheel Diameter, Inches	Price Truck, Capped Wheels Style 1 — Track Gage 36 in.	42 in.	44 in.	48 in.	56½ in.	Price Truck, Wheels Style 2 — Track Gage 36 in.	42 in.	44 in.	48 in.	56½ in.	Extra Per Truck for 33 Inch Wheels Instead of Wheels Shown Standard
1 1/4	8	.....	.....	.....	.....	.....	$13.96	$14.36	$14.48	$14.84	$15.36	$0.30
1 5/16	8	.....	.....	.....	.....	.....	15.36	15.90	16.08	16.44	17.16	.30
1 5/16	10	.....	.....	.....	.....	.....	15.40	15.80	15.92	16.18	16.70	.40
1 5/16	10	.....	.....	.....	.....	.....	16.90	17.44	17.62	17.98	18.70	.40
1 3/4	11	$19 92	$20.46	$20 64	$21.00	$21.72	18.40	18.94	19.12	19.48	20.20	.44
2	11	21 80	22 16	22 28	23 12	24 00	20.28	20 94	21 16	21.60	22 48	.44
1 3/4	12	20 96	21 50	21 68	22 04	22 76	19.20	19 74	19 92	20 28	21.00	.48
2	12	22.84	23.50	23.72	24 16	25.04	21.08	21.74	21.96	22.40	23.28	.48
2 1/4	12	27.30	29.14	29.42	29.98	31.10	25.56	26.40	26.68	26.24	27.36	.50
2 1/2	12	31 70	32 75	33.10	33.80	35 20	30.00	31 05	31 10	32.10	33.60	.50
1 3/4	14	22.88	23.42	23.60	23.96	24 68	21.20	21.74	21.92	22 28	23.00	.54
2	14	24.76	25.42	25 64	26.08	26.96	23.08	23.74	23.96	24.40	25.28	.54
2 1/4	14	29.16	30.00	30.28	30.84	32 00	27.48	28.42	28.70	29.26	29.40	.66
2 1/2	14	33 60	34 65	35.00	35.70	37 10	31.90	32 90	33 30	34.00	35 40	.68
2	16	27.48	28.14	28.36	28.80	29.68	25.08	25.74	25.96	26.40	27.28	.62
2 1/4	16	32.84	33.68	33.96	34.52	35 64	29.84	30.68	30.96	31 52	32.64	.80
2 1/2	16	37.20	38 25	38 60	39 30	40 76	34 00	35 05	35 40	36.10	37.50	1.10
6	16	48.80	50.80	50.80	51.80	53.80	46.16	47.66	48.16	49.16	51.16	1.30
2	18	29.48	30.14	30 36	30.80	31.68	27.08	27.74	27.96	28.40	29.28	.70
2 1/4	18	34.92	35.76	36.04	36.60	37.72	31.80	32.64	32.92	33.48	34.60	.88
2 1/2	18	40.56	41.62	41.96	42.66	44.06	37.04	38 10	38 44	39 14	40 54	1.26
3	18	51.06	52.56	53 06	54.06	56.06	48.08	49.58	50.08	51.08	53.08	1.46

Dimension Diagram of Wheel

FIG. 4793.

SPECIAL SELF-OILING WHEELS

STYLE 1 OR 2 TO FIT OLD AXLES

To order Special wheels state style of wheel required, kind of axle, square or round, and give dimensions "B" "D" "F" "H" and "S" on diagram, Fig. 4793, or else send us old wheel to duplicate. Special pattern wheels take special discounts off list.

CAR TRUCKS

WHEELS TIGHT ON AXLES

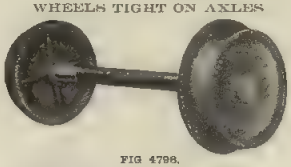


FIG 4798.

DIMENSION DIAGRAMS FOR ORDERING TRUCKS

WHEELS PRESSED TIGHT ON AXLES

No. 4

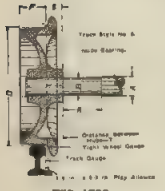


FIG 4799.

No. 5

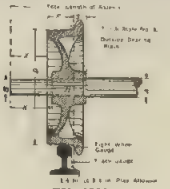


FIG. 4800.

No. 6

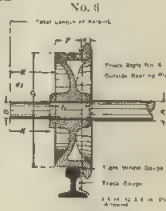


FIG. 4801.

No. 7

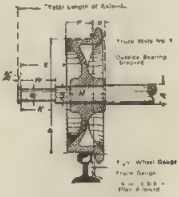


FIG 4802

Truck No. 4. Absolutely necessary to give style of truck and distances "A," "B," "K," "T," track gage, diameter of wheel (D), kind of wheel and other dimensions if particular.

Truck No. 5. Necessary to give style of truck and distances "A," "B," "K," "L," track gage and diameter of wheel (D), kind of wheel and other dimensions if particular.

Truck Style 6. Necessary to give style of truck and distances "A," "B," "K," "L," track gage, diameter of wheel (D), kind of wheel and other dimensions if particular.

NOTE.—Specify if hubs are to be faced.

Truck Style No. 7. Necessary to give style of truck and distances "A," "A-2," "B," "K," "W" "L," diameter of wheel (D), kind of wheel, track gage, and other dimensions if particular.

ROUND AXLE TRUCK

INCLUDING AXLE STRAPS

TRUCK STYLE P. WHEELS STYLE 1 OR 2 AS BELOW

FIG. 4794.

LIST PRICES OF CAR TRUCKS

Each consisting of 4 self-oiling wheels, 2 round axles, 4 single cast boxings, 2 axle straps. Wheels and axles are thoroughly machined.

Size of Axle, Inches	Wheel Diameter, Inches	Price Truck, Capped Wheels Style 1 — Track Gage					Price Truck, Wheels Style 2 — Track Gage					Extra Per Truck for Each Inch Wider Thread of Wheels Than Standard
		36 In.	42 In.	44 In.	48 In.	56½ In.	36 In.	42 In.	44 In.	48 In.	56½ In.	
1¼	8	.....	.....	.....	.....	.....	$14.72	$15.02	$15.12	$15.32	$15.72	$0.80
1⅜	8	.....	.....	.....	.....	.....	16.08	16.50	16.64	16.92	17.48	.80
1¼	10	.....	.....	.....	.....	.....	16.16	16.46	16.56	16.76	17.16	.40
1⅜	10	.....	.....	.....	.....	.....	17.56	17.98	18.12	18.40	18.96	.40
1¼	10	.....	.....	.....	.....	.....	18 72	19.14	19 28	19 56	20 12	.44
1¾	11	$20.24	$20.66	$20 80	$21 08	$21.64	21 34	21.88	22 06	22.42	23.14	.44
2	11	22.86	23.40	24 58	24 94	24.66	19 92	19.94	20 08	20.36	20.92	48
1¾	12	21 28	21.70	21 84	22.12	22.68	22.14	22 68	22.86	23.22	23 94	.48
2	12	24 90	24 44	24 62	24 98	25 70	26.80	27 02	27 46	28.36	.50	
1⅞	12	27 80	28.46	28 68	29.12	30.00	26 14	30.02	30.30	30.86	32 00	.54
2¼	12	32 14	32.98	33 26	33 82	34 94	29 18	21.94	22 08	22.36	22 92	.54
1¾	14	23.20	23 62	23.76	24.04	24.60	21 52	24 68	24 86	25 22	25 94	.54
2	14	25 82	26 38	26 54	26 90	27 62	24 14	28.06	28 72	28 94	29 38	30 28 .68
2¼	14	29 64	30.30	30.52	30 96	31 84	29 50	30 54	30.62	31 18	32 30	.70
2½	14	31 00	31.84	55 12	35 68	36.78	28 14	28.88	26 96	27.22	27.94	.62
2	16	28.54	29.08	29.26	29.62	30.34	30 20	30 96	31 18	31 62	32 50	.80
2¼	16	33 30	34 06	34 18	34 62	35 50	34 38	35 22	35.50	36 06	37 18	1.10
2½	16	37 58	38 42	38 70	39 26	40 38	45.28	46.54	46 96	47 80	49.48	1 30
3	16	47.92	49 18	19 60	50 44	52 12	28.14	28.68	28.86	29.22	29.94	.70
2	18	30.54	31.08	31.26	31.62	32.32	32.28	32.94	33.16	33 60	34 48	.88
2¼	18	35.40	36.06	36.28	36.72	37.80	36 54	39 10	40 22	1.26		
2½	18	40 94	41.78	42 06	42.62	43.74	37.42	38.26	38.54			
3	18	50.16	51.42	51.84	52.68	54.36	47.10	48.46	48.88	49.72	51.40	1.46

In ordering give truck gage, width of car bottom and distance of axles on centers, style of truck, style of wheel, diameter of wheel and axle.

Capped Self-Oiling Wheel
Style 1

FIG. 4795.

Self-Oiling Wheel
Style 2

FIG 4796.

STYLE "B" WHITNEY MINING TRUCKS

WITHOUT STRAPS. LIST 20 B.

FIG 4791

Round Axle Trucks with 4 bolt boxings. No axle straps. Each truck, as illustrated above and as listed below, consists of 4 "Whitney" wheels, with solid center oiling plug bolts, 2 round axles, 4 felt packed boxings. Center oiling spring valves extra, 25c net per wheel.

Size of Axle Inches	Diam. of Wheel Inches	Price Per Truck, Style B					Approximate Wt. of each Wheel Lbs.	Shipping Weight of Truck 28 in Gauge Lbs.	Width of Thread of Standard Wheels Inches	Extra Cost per Truck for Wheels of ½ inch Wider Tread
		38 in. Gauge	42 in. Gauge	44 in. Gauge	48 in. Gauge	56½ in. Gauge				
1¾	9	$26 14	$26.86	$27 00	$27.28	$27.24	36	260	3	$0.30
1¾	10	27 48	27 90	28.04	28 32	28.88	43	280	3	.40
2	10	31 56	32.10	32 28	32.64	33.26	49	350	3	.40
1¾	11	28.34	28 74	28.90	29 18	29.74	48	300	3	.44
2	11	32.36	32.90	33.08	33.44	34.16	53	360	3	.48
1¾	12	30 28	30.70	30.84	31 12	31.68	59	330	3	.48
2	12	32.80	34 34	34 52	34.88	35 60	65	410	3	.56
2¼	12	38.36	39.02	39.24	39.68	40.56	70	450	3¼	.58
2½	12	45 16	46.00	46.28	46 84	47 96	82	550	3½	.52
1¾	13	30.84	31.26	31.40	31.68	32.24	61	350	3	.54
2	13	34.44	34 98	35 16	35 52	36 24	64	410	3	.52
2¼	13	40.28	40 94	41 16	41 60	42 48	80	490	3¼	.64
2½	13	45.20	46 04	46.32	46.88	48.00	85	570	3½	.58
1¾	14	31.56	31 98	32 12	32 40	32 96	65	370	3	.54
2	14	35.40	35 94	36 12	36.48	37.20	70	430	3	.54
2¼	14	39.88	40.54	40.76	41.20	42.08	76	490	3¼	.64
2½	14	45.84	46 68	46.96	47.52	48 67	90	600	3½	.94
2¾	14	51.58	52 10	52.44	53 12	54.48	100	680	3¾	1 10
3	14	58 58	59.88	60.18	60 98	62 58	112	810	3½	1.20
3½	14	68 40	70.20	70 80	72 00	74 10	126	970	3¾	1 30
2	15	36 68	37 22	37 40	37 76	38 48	75	450	3	.74
2¼	15	41.16	41 82	42.04	42 48	42 36	82	510	3¼	.86
2½	15	47.36	48.20	48.48	49 04	50.16	100	630	3½	1.04
2	16	38.28	38.82	39.00	39 36	40.08	86	470	3¼	.62
2¼	16	42 92	43 58	43 80	44 24	45 12	95	530	3¼	.88
2½	16	49 20	50 04	50 32	50.88	52 00	110	650	3½	1 10
2¾	16	54 52	55 38	56 22	56 56	57 92	120	770	3¾	1.15
3	16	61 98	63.18	63 58	64 38	65.98	130	850	3½	1 20
3½	16	70.80	72.60	73.20	74.40	76.80	140	1150	3¾	1.40
2	18	40 68	41 22	41 40	41.76	42.48	98	560	3¼	.70
2¼	18	45 48	46 14	46 26	46 80	47 68	110	600	3½	.88
2½	18	51 68	52 52	52 80	53 36	54 48	125	700	3¾	1.26
2¾	18	57 32	58 34	58 68	59 36	60 72	135	820	3½	1 40
3	18	63.48	64 68	65.08	65.88	67.48	140	920	3¾	1.50
3½	18	72 00	73.80	74 40	75.60	78.00	146	1050	3¾	1.60
2½	20	55.68	56.52	56.80	57.36	58.48	136	780	3¼	1.40
3	20	66 58	67.78	68 18	68 98	70 58	155	970	3¾	1 50
3½	20	75 80	77 60	78 20	79 40	81 80	165	1100	3¾	1.60

TO ORDER GIVE

(1) Style of Truck. (2) Size of axle. (3) Diameter of Wheel. (5) Track Gage (the exact distance between heads of rails inside.) (6) State whether wheels are desired with solid center plug bolt or with patent malleable spring valve oiling device, or with old side oil bolt.

[A] No order can be filled without EVERY specification, 1 to 6, being given!

[B] The cost of the patent spring valve cage is 25c net per wheel additional after taking discounts, or $1.00 net per truck. They can be inserted any time into the same hole as the solid center plug. The spring valve is never included unless specified in quotation or order.

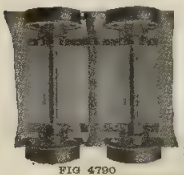


FIG 4790

STYLE A
WHITNEY MINING TRUCKS

LIST 20—A

Cut shows truck bolted to car bottom. Axles always parallel. Truck can't get loose.

Round axle truck with axle straps. Each Truck, as shown in pictures above and as listed below consists of 4 "Whitney" Wheels, with center oiling solid plug bolts, 2 round axles, 4 felt packed boxings, and 2 steel axle straps. Center-oiling spring valves extra, 25c net per wheel.

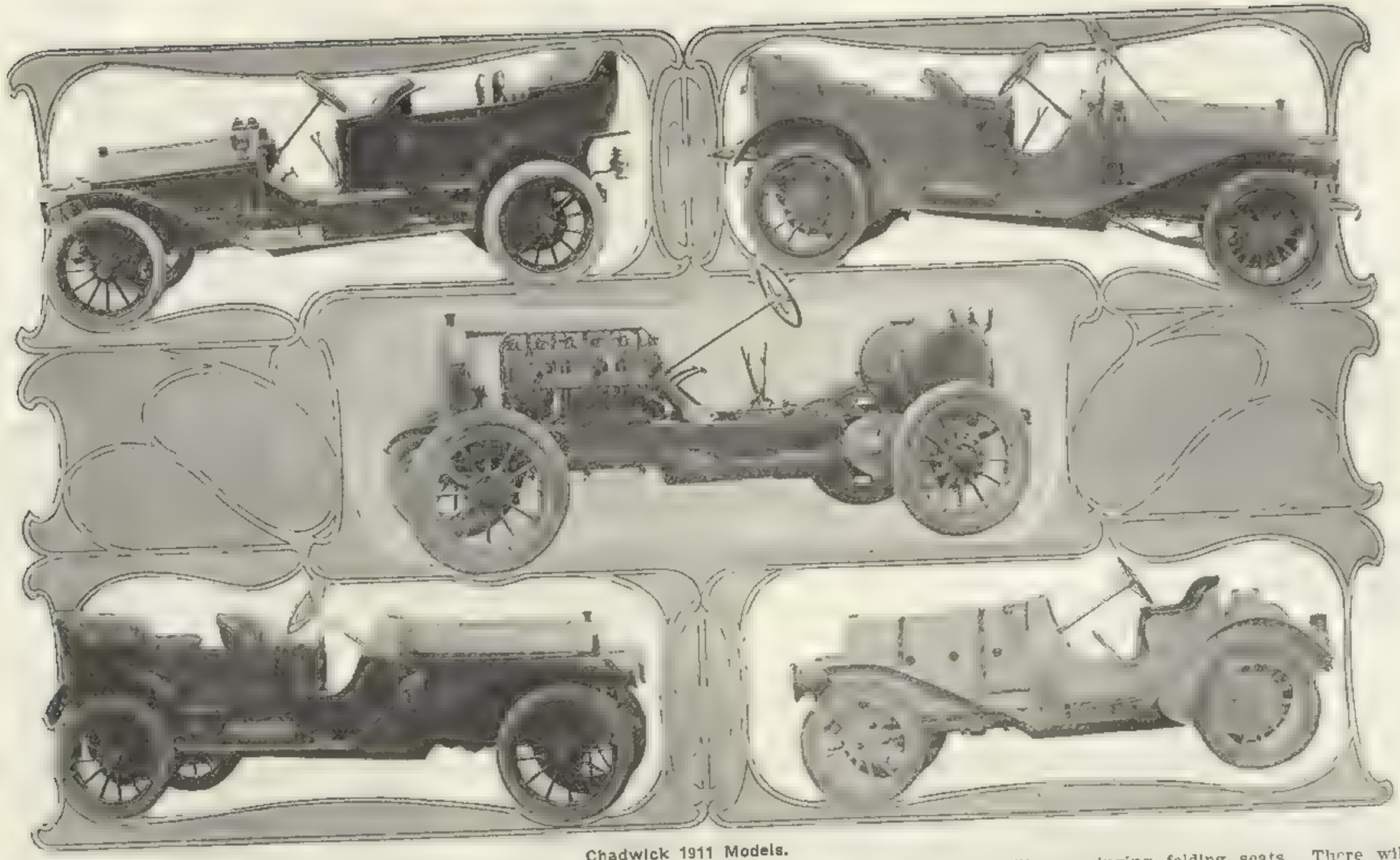
Size of Axle, Inches	Diam. of Wheel, Inches	Price per Truck, Style A: 36 in. Gage	42 in. Gage	44 in. Gage	48 in. Gage	58½ in. Gage	Approx. Wt. of each Wheel, Lbs.	Shipping Wt. of Truck 36 in. Gage, Lbs.	Width of Thread of Wheels, In.	Extra Cost per Truck for Wheels of ¼ in. wider tread
1¾	9	$26 36	$26.78	$26 92	$27.20	$27.76	36	260	3	$0 30
1¾	10	27.40	27.82	27 96	28 24	28.80	43	280	3	.40
2	10	31.58	32.12	32.30	32 66	33.38	49	350	3	.40
1¾	11	28.26	28.68	28.82	29.10	29.66	48	300	3	.44
2	11	32.38	32.92	33.10	33.46	34.18	58	360	3	.48
1¾	12	30.20	30.62	30.76	31.04	31.60	59	330	3	.48
2	12	33.82	34 36	34.54	34.90	35.62	63	410	3	.56
2¼	12	37.66	38.32	38 54	38.98	39.86	69	450	3½	.58
2½	12	41 66	45.50	45.78	46 34	47 46	82	550	3½	.52
1¾	13	30.76	31.18	31.32	31.60	32.13	61	350	3	.54
2	13	34.46	35.00	35.18	35.54	36.26	64	410	3	.52
2¼	13	39.58	40.24	40.46	40.90	41.78	80	490	3½	.54
2½	13	44.70	46.54	45.82	56.88	47.50	85	570	3½	.58
1¾	14	31.48	31.90	32.04	32.32	32.88	64	370	3	.54
2	14	35 42	35.96	36.14	36.50	37.22	70	430	3	.54
2¼	14	39.18	39.84	40.06	40.50	41.38	76	490	3¼	.64
2½	14	45 34	46.18	46 46	47.02	18.14	90	600	3¾	.94
2¾	14	50.40	51.42	51.76	52.44	53.80	100	660	3½	1.10
3	14	56.70	57.90	58.30	59.10	60.70	112	760	3½	1.20
3½	14	66.90	68 70	69.30	70.50	72.90	126	920	3½	1.30
2	15	36.70	37.24	37.42	37.78	38 50	74	450	3	.74
2¼	15	40.46	41.12	41.34	41 78	42.66	82	510	3¼	.86
2½	15	46.86	47.70	47.98	48.54	49.66	100	530	3½	1.04
2	16	38.30	38 84	39.02	39.38	40.10	86	470	3¼	.62
2¼	16	42.22	42.88	43.10	43 54	44.42	95	550	3¼	.88
2½	16	48 70	49 54	49 82	50.38	51 50	110	650	3½	1.10
2¾	16	53.84	55.20	55.54	55.88	57.24	120	740	3½	1.15
3	16	60 10	61.30	61.70	62.56	64.10	130	800	3½	1 20
3½	16	69.30	71.10	71.70	72.90	75.30	140	970	3½	1.40
2	18	40.70	41.24	41.42	41.78	42.50	98	560	3¼	.70
2¼	18	44.78	45.44	45.66	46.10	46.96	110	600	3¼	.88
2½	18	51.18	52 02	52 30	52 86	53.98	125	700	3½	1.26
2¾	18	56.64	57.66	58.00	58.68	60.04	135	790	3½	1.40
3	18	61.60	62.80	63.20	64.00	65.60	140	870	3½	1.50
3½	18	70.50	72.30	72.90	74.10	76.50	146	1000	3½	1.60
2½	20	55.18	56.02	56.30	56 86	57.98	136	780	3¼	1.40
3	20	64.70	65.90	66.30	67.10	68.70	155	820	3½	1.50
3½	20	74 30	76.10	76.70	77.90	80.30	165	1100	3¾	1.60

TO ORDER GIVE

1—Style of Truck. 2—Size of Axle. 3—Diameter of Wheel. 4—Wheel Base, or distance axles are spaced apart on centers. 5—Track Gage (the exact distance between heads of rails inside). 6—State whether wheels are desired with solid center plug bolt or with patent malleable spring cage oiling device, or with old side plug.

A—No order can be filled without EVERY specification, 1 to 6, being given!!

B—The cost of the patent spring valve cage is 25c net per wheel additional after taking discounts, or $1 00 net per truck. They can be inserted any time into the same hole as the solid plug. The spring valve is never included unless specified in quotation or order.



Chadwick 1911 Models.

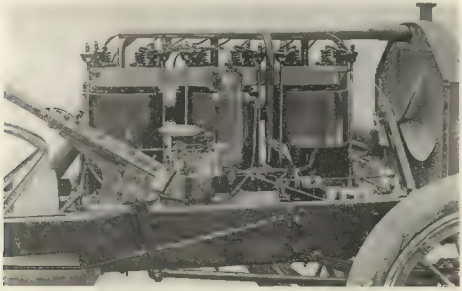
Fig 1. The models include a touring car, with 133 in. wheel base, 36 by 4 front and 37 by 5 rear tires with auxiliary swinging folding seats. There will be 2 tourabout models with low bodies and extreme rake to the steering post. A runabout for high speed work, which model has already made itself well known in speed contests. The five passenger model is the same as the seven with the exception of the springs, body and rake of the steering post. The standard colors are Brewster green and Chadwick red or Royal Blue, upholstering to match. Equipment, demountable rims, tire brackets, robe rail, foot rail, full set of tools, Prest-O-Lite tank, 10 in searchlight, combination electric and oil side and tail lamps and storage battery for lighting, $5,500 f. o. b Potistown. The standard tourabout seats five, tonneau detachable, rumble seat can be had if desired.

Type 19 Model Chadwick Great Six

The Chadwick Engineering Works, Pottstown, Pa., were among the first manufacturers who confined their efforts entirely to the building of high-powered six cylinder cars. The concentrating of an entire organization on the production of one type of car only, has enabled them to bring that model to the highest degree of perfection, furnishing in one car all those distinctive features which have heretofore been scattered over many models; a car which is equally adapted for operation in the congested traffic of the city or for long distance touring.

model, this having been done to furnish definite proof to Chadwick owners what cars similar to their own will do when entered against special racing cars and to insure confidence that cars built of material and workmanship to stand the severe strain of racing will provide more than an ample margin of safety for average use in the hands of owners.

The seven and five passenger models represent the largest production of the company. Great thought and care have been expended to make them in their own individual way the finest that can be produced.



Inlet Side Chadwick Great Six Motor.

Fig. 2. This engine has cylinders cast in pairs with a single copper water jacket applied to each pair. Carburetor has been increased in size and a heating attachment provided to take care of low grade gasoline. Inlet valves have been increased in size, placed in the heads and operated by overhead rockers. Ignition is by Bosch high tension magneto, all wires being neatly encased as shown.

The Chadwick Car to-day represents advanced ideas of engineering, design and construction. It has been refined from year to year to the point where it will meet the wishes of the most discriminating and critical buyer. The mechanical construction and general details of engineering design are identical in all models, the only difference between the five and seven passenger types being the weight of the springs and the set of the steering gear. In the Runabout, or two passenger model, the wheel base has been considerably shortened, to facilitate handling at high speeds, and in addition it is equipped with special long distance oil and gasoline tanks.

The Chadwick Engineering Works have for several years been prominently identified in racing events with a stock Runabout

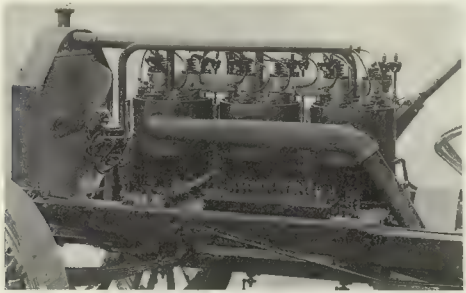
Touring Car Model.

The Touring Car model is a 133 inch wheel base chassis fitted with 36x4 tires in the front and 37x5 in the rear. The tonneau is large and comfortable, the auxiliary seats are swinging and folding, and when folded up occupy very small space in the tonneau. The side entrance doors are so hung at the right as to swing upwards and outwards, the front seat being divided by a low partition. The rake of the steering gear, finish and upholstering, are all that can be desired. The design and lines of the body are such as to give an attractive appearance to the car both with or without a top. It has substantial fenders and the coach work shows the highest achievement of the coachmaker's art. The new models will have the same general lines of body design which has made the Chadwick Car

a distinctively different car from any other car on the market, and the smaller details of fitting, finish, upholstering and attachments show the highest degree of excellence. The standard colors are Brewster Green and Chadwick Red, upholstering to match. The standard equipment consists of demountable rims, tire brackets, robe rail, a foot rail, full set of tools, 10 inch searchlight, with Prest-O-Lite tank, combination electric and oil side and tail lights and storage battery. The price is $5,500 f. o. b. Pottstown.

tonneau, with double side doors. The lines are graceful and attractive, it is easily handled and possesses speed in a marked degree, owing to the lower wind resistance of the smaller body. The tonneau can be detached if desired, and the deck used to carry baggage, or a rumble seat can be furnished. It sells for $5500 f. o. b. Pottstown, Pa.

The Runabout Model is a 112 inch wheel base chassis and has identically the same engine as the Tourabout and Touring Car models, the only difference throughout the



Exhaust Side Chadwick Six Motor.

Fig. 3. This view shows clearly the large force feed oiler which supplies through 14 leads all the parts of the engine and the compensating gears. Some of the bearings are also provided with ring oilers. The timer is mounted as shown at the left of the engine, the outside of the casing being stationary so that the wires do not move, the central member being located for advance or retard by means of a helical-grooved sleeve.

There will be two Tourabout models offered, a Miniature Tonneau Tourabout, seating four passengers comfortably, or five closely, the body design being very low and rakish, with extreme rake to the steering gear. The fenders are long and narrow, with graceful sweep, in order that the cars can be operated in very close quarters and visored at the ends to well enclose the wheels. The seat to the left of the driver is set back in order to leave the driver's vision unobstructed to the left. This model will be found unusually well adapted to those desiring to operate their own car. The finish, upholstering, spring suspension and all details are carefully worked out to conform to the particular purposes for which this model is intended. The standard colors are Royal Blue and Brewster Green. The tire equipment is 36x4½ front and rear, demountable rims, and the car sells for $5500 f. o. b. Pottstown, Pa.

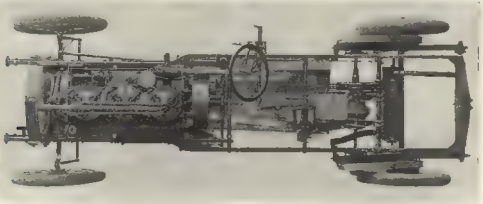
The standard Tourabout is a full five passenger car, being equipped with detachable

construction being the shortening up to allow placing in it the shorter wheel base. There has been found a large demand for this class of car among owners who desire to operate their own cars and insist upon power, speed, flexibility and ease of operation to the greatest possible extent, having on the high gear the ability to throttle to six miles per hour with an ultimate speed of ninety miles. It is equipped with a luxurious and carefully worked out body, whose lines are graceful, attractive and symmetrical. It is not only adapted for high speed work, but is equally available for park or city driving or long distance touring. The gasoline carrying capacity is 50 gallons and of lubricating oil 23 gallons, enabling one to be independent of the base of supplies.

1911 Refinements.

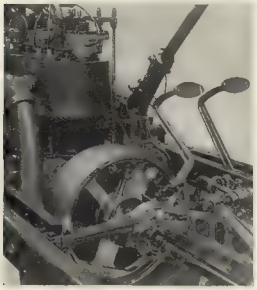
The Type 19 engine shows the following improvements and refinements: The carburetor has been increased in size and around the inlet manifold has been placed

a heating attachment not only enclosing the manifold, but the heater pipe passes directly through the center. This will enable the low grades of gasoline now obtainable on the market to be used satisfactorily, and when the car is throttled down very low on direct drive there will be no difficulty experienced from condensation of the gas in the inlet manifold. The heating arrangement is so designed that the temperature of the inlet manifold can be maintained at any point up to the temperature of the heating water, enabling it to be instantly adjusted to meet the conditions found in different parts of the country. A special flooding device and air shutter has been installed for the purpose of easy starting. The spiral advance on the magneto used in former models will be maintained with a slight increase in size and the addition of an outboard bearing in order to reduce to a minimum the wear and lost motion. The inlet valves have been largely increased in size and placed in the head of the motor, actuated by push rods and rocker arms, their connecting valve lifts being made instantly adjustable in order to insure noiseless operation. All points and working parts are carefully ground and case hardened to insure a long life. All inlet and exhaust springs are carefully faced square and have been slightly stiffened. The water jackets have been maintained with exactly the same construction as previously used in Chadwick Cars. There has been a slight increase in size, however, due to the changing of the valve position, and the jackets, in conjunction with the radiator, carry nine gallons of cooling water. The pump has been placed on the left side of the engine, inserted in the oiler drive line with an Oldham coupling, and is easily removed. The oiler has been increased in capacity and is now furnished with a large filler hole, one of the small details that tend to greater satisfaction. The Herz Distributor has been removed from the rear of the engine and placed in a most accessible and well-protected position on the left side, well to the front, being mounted vertically and driven from the pump line shaft and actuated by a spiral advance similar to that of the magneto. A separate set of plugs is installed for the auxiliary system which furnishes a complete double system of ignition. The time gears are all of hardened steel, are carefully cut and accurately ground, and fitted to insure their quiet and smooth operation. The installing of hardened steel time gears absolutely insures long life and durability.



Plan of Chadwick Chassis.

Fig. 4. Attention is called to the peculiar frame construction at the off-sets, the narrow portion being carried backward for some distance to strengthen the frame at this point. Touring car wheel base 133 in., the chain cases, a distinctive Chadwick feature, are retained, the chains running in lubricant. All adjustments throughout the car are arranged so that they can be easily operated and instantly locked.



Detail of Chadwick Clutch.

Fig. 5. An internal expanding band clutch is used, having the distinctive feature, that the band can be removed by taking off three nuts, can be oiled or treated, inspected and replaced without spoiling the adjustment, details are given in the text.

The Band Clutch.

The clutch is of the internal expanding type, actuated by a rack and pinion and held into engagement by a very light spring pressure. The process of engagement is very smooth, being free from jerking or gripping. The flywheel is 18 inches in diameter, with 6 inch face. The expanding band of the clutch is leather faced at the point of contact with the flywheel. A strong feature of this clutch is the fact that by removing three nuts the band can be slipped out and the condition of the leather face examined or treated if desired, and the band reinserted without disturbing its adjustment. The foot lever operates the usual type of yoke, actuating a sleeve which carries a small rack operating a pinion and radial shaft inside of the clutch, the outer end of this clutch carrying a small crank surrounded by a hardened steel roller. The rotation of this crank by the change of position of the clutch pedal forces the band in or out of engagement with the flywheel. There is attached to the body of the clutch a drum, and as the pedal is actuated to throw the clutch out, the small brake passes down beside the drum and prevents the clutch expanding. This brake is so designed as not to interfere with the clutch adjustment, and in case incorrect adjustment is made it would not prevent the clutch being entirely disengaged.

The universal joint is not in the ordinary acceptance of the term a universal joint, but a flexible joint made of chrome nickel steel with ball shaped pins of chrome nickel steel on the end. The joint is keyed to the drive shaft on the transmission and the connecting drive shaft between the clutch and the transmission. In the years of use of this joint there has never been a replacement, it is claimed.

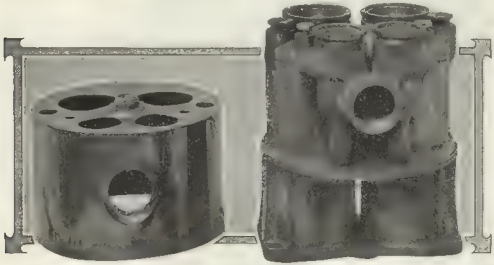
The drive shaft is of special heat treated steel, flanged for carrying the clutch body integral.

Semi-Selective Change Gears.

The transmission is the Chadwick semi-selective type, three positions being located from the neutral, namely, first, second and reverse, the gear shifting lever being equipped with a ratchet device which positively locks each gear shift in its correct relation and prevents passing through or improperly meshing gears. The principle of the Chadwick transmission lies in the large bevel gear in the rear, the intermediate drive being directly from the drive shaft to the counter shaft and to one set of double bevel gears, drive being through the line shaft directly to the other set of bevels, with direct drive on fourth. The gear ratio is 2.25 to 1 on the touring car and tourabouts. The gears are of a special alloy, heat treated, and where possible the gears are forged integral with their shafts. The bearings are all unusually large, imported, all gears being carefully cut and accurately ground to insure their quietness of operation. A filler plate for grease is installed in top of transmission and at all points where shafts enter or leave the transmission, carefully designed grease retaining devices are installed.

The chain drive is of the Chadwick type with enclosing dust proof chain case, whose principle lies in the employment of a radius rod forming the major portion of the chain case. This radius rod is a large, carefully designed manganese bronze casting, ribbed to obtain strength with minimum weight. The chains operate in lubricant.

This type of drive tends to work with the springs to secure greater ease of riding. The differential is placed in the transmission which loads the springs, and in the



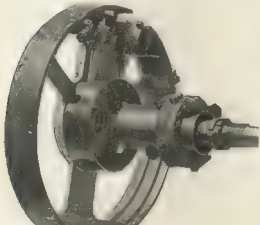
Chadwick Twin Cylinders and Water Jacket.

Fig. 6. The unusual type of cylinder casting is here shown, a single light copper jacket in cases both cylinders giving a large volume of water, the water capacity including the radiator being 9 gallons. The cylinders are ribbed at the lower ends and the lugs are of large size.

rear is employed an I beam section axle of chrome nickel steel drop forged in one piece, which possesses a wide margin of safety.

The Brakes.

The brakes are large and powerful, the main or service brake being actuated by a pedal and acting directly upon a large crucible steel drum bolted directly to the compensating case. The brake shoes are equipped with cast iron liners, the brake drum being 14 inches in diameter with 3 inch face with cork inserts and producing instant locking action to the rear wheels, if desired. No disagreeable growling or chattering noise is experienced from brake application, and the cast iron liners insure long life. The placing of the brake upon the compensating case insures absolute compensated braking action, for at every turn the equalizing gears operate, with consequent assurance of their being in perfect condition. All adjustments are by hand, automatic locking devices being provided, these being some of the small refinements which must to-day be found on the high powered, high priced car. The rear or emergency brakes act directly upon the rear wheel drums and are operated by a hand lever. They are large in size, dust proof, manganese bronze to crucible steel, adjustments by hand.



The Clutch Band.

Fig. 7. The expanding band used in the Chadwick clutch is herewith illustrated; it is operated by the usual type of yoke and foot lever. These control a sliding sleeve integral with a rack, the rack operating a small pinion on a radial shaft, the upper end of which is formed into a crank and surrounded by a roller which expands the band.

Spring Safety Link.

In the touring car and tourabout models the spring construction is semi-elliptic front and platform spring suspension rear. The front springs are equipped with a special safety link. This link is a patented Chadwick feature and absolutely provides against any danger of ditching due to loss of steering from front spring breakage. Owing to the engine being a dead load, the spring action in the front is further controlled by the equipment of Truffault Hartford Shock Absorbers. The platform spring extension in the rear has been carefully worked out, the springs are bushed, eyes being perfectly parallel and springs equipped with force feed oilers, ample clearance being allowed for spring action. Runabout models are equipped with semi-elliptic front and rear. All springs are of vanadium steel, with ample leaves so that breakage is practically unknown.

A Carefully Designed Steering Gear.

The steering gear is of the worm and screw type, completely built in the Chadwick factory and designed after the gear first used on the racing cars. It is of the reversible type, equipped with 19 inch steering wheel, is remarkably quick in operation, giving a full sweep of the front wheel in 1 5-16 turns of the steering wheel. The steering gear case is phosphor bronze and arched with a long supporting arm, so used that no dependence is placed on the dash support to hold the steering column. To prevent road shocks being communicated to the gear, the steering axle bolts around which the front wheels revolve as a center are so inclined that road shocks will be absorbed by the axles and through the springs instead of through the steering gear connections. Provision is made for adjustments, which can be made without disassembling the gear. The side link connecting the steering knuckle arm, also the cross link which is at the rear of the front axle, are fitted with ball and socket ends so arranged that if the cap should unscrew and come out, it would be impossible for the ball to come out of the socket, owing to the method of assembling. The cap simply serves the purpose of closing up the end of the joint and retaining grease.

Axles and Wheels.

The axles, both front and rear, are of I section, chrome nickel steel, drop forged in one piece. These are the type of forgings which are hammered, and the constant pressing of the metal tends to make them enormously tough. They are heat treated to give the maximum strength. The steering axles and steering axle levers are also of special alloy steel.

The wheels are built of the finest grade hickory, having a specially designed rosette on the spokes for carrying the drums. The wheel bearings are all imported and several sizes larger than the loading would require, and there is provided between the inside and outside bearings spacers so designed that if a ball should break, instead of grinding out the race the bearing will immedi-

ately change to a plain bearing and run upon the spacer. This spacer also serves the function of preventing the wheels from coming off.

The frame is of chrome nickel steel channel section, heat treated and bottle neck, to allow short turning, and at the point where the frame is narrowed at the bottle neck there are supporting reinforcing gussets installed. All cross members are of chrome nickel steel, heat treated.

Magneto Ignition.

Ignition is by means of a Bosch High Tension Magneto, positively gear driven, the advance and retard being obtained by means of a spiral advance. Rotation of the circuit breaker is not employed at all, it being fixed in a permanent position to give a maximum intensity of spark at all positions of advance or retard, a fat, hot spark being obtained, which enables the car to be throttled down very low on direct drive. The auxiliary system consists of a Herz Low Tension Timer with high tension distributor and a single coil box on the dash with storage battery and a separate set of plugs, so that the two systems are entirely independent of each other, the auxiliary system being used for purposes of starting only, and where necessary as an emergency. The car can be started on quarter turn of the crank on the magneto alone. The usual number of spark and control levers are provided on the wheel, except that they are very substantial and in addition to this the magneto cut out button for the purpose of grounding the magneto is placed upon the steering wheel instead of upon the dash and in descending steep hills the engine can be used as a brake if desired. The magneto is held by means of a strap and winged nut, being located by dowel pins, so that it can be quickly removed for purposes of inspection.

Lubricating Details.

Lubrication is by means of a Precision Oiler, 14 feeds, there being an oil lead to each of the pistons, to each of the main bearings, to each of the crank case compartments and to the compensating case in the back, the lead to the compensating gear case passing through a bleeder test valve on the dash, which shows whether or not there is oil in the tank. The oil leads to the pistons lubricate the cylinder walls and also pass through the hollow wrist pins, lubricating the upper ends of the connecting rods. The leads to the main bearings lubricate these bearings and the oil passes through them to the connecting rod bearings, the crank shaft being equipped with a banjo oil catcher which throws oil in to feed the connecting rods. The front and rear bearings are also ring oiled, there being sufficient oil underneath them to deliver oil to them in addition to the force feed of the lubricator. In addition to this, there is a receptacle in the base which furnishes a separate and distinct system of splash lubrication. After the lubricating oil has passed through a bearing, its physical character is changed, and to insure as near perfect lubrication as can be secured, fresh oil must be supplied to each and every bearing, which cannot be obtained other than by a positive force feed lubricator supplying fresh oil. The oiler is so designed as to furnish instant adjustment, so that any desired quantity of oil can be fed to any particular point.

A feature brought out strongly by the makers is that the bearings throughout the entire Chadwick Car—engine, wheels, steering gear, transmission, in fact every bearing—is of larger proportion than would be required by the loads they carry, and this fact insures long life and durability to the car.

A MERCHANT'S CONVERTIBLE AUTOMOBILE

The Monitor Automobile Works, 200 N. Academy st., Janesville, Wis., formerly of Chicago, has just opened a Los Angeles agency with the C. G. Dwight Auto Co. This concern is one of the best known in Los Angeles, and will push the Monitor commercial car among the merchants of the western city. This car appeals to merchants of moderate means because its removable body enables them to have a delivery car for business days, and pleasure auto for Sundays and evenings. The Monitor is a shaft driven car with a maximum speed of 20 miles per hour, and can carry 1500 to 2000 lbs.

Edward R. Hewitt, former head of the Hewitt Motor Co., which was absorbed by the Metzger Motor Car Co., of Detroit, Mich., has joined the Metzger forces as mechanical expert and stockholder.

TRUCKS TO LEAD AIRSHIPS HOME

The Doubleday, Page & Co.'s plant is at Garden City, N. Y., just in the center of the flying machine industry, and in placing an order for White trucks the company specified that the tops should be decorated with the usual sign which has been used to guide air pilots. Hereafter, when an aviator gets lost, all he has to do is to find one of these trucks and tag along after it. It will lead him home.

BOSTON TAXICAB RATES RAISED

The Boston, Mass., taxicab companies a short time ago petitioned the Police Commissioner to be allowed to raise their rates, and were allowed a slight raise, but not as much as they desired. They now charge 40 cents instead of 30 for the first half mile, the charge of 10 cents for each quarter mile remaining the same. Twenty cents is charged for each extra person, and 10 cents for each four minutes of waiting.

"CAPEWELL" HORSE SHOE NAILS

FIG 2117

Nos.	3	4	4½	5	6	7	8	9	10	11
List prices	$0 75	35	30	22	19	18	17	16	16	15

"The Capewell" will last until the shoe is worn out.

Even in fly time "The Capewell" will stand the strain of restless stamping where all other nails fail.

NEW STANDARD HORSE NAILS

BEST IN THE WORLD—BAR NONE

MANUFACTURED FROM THE FINEST SWEDISH STOCK THAT IS MADE

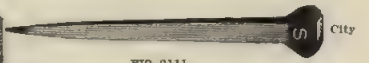


FIG. 2111.

FIG. 2112.

Size of Nail.....Nos.	3	3½	4	4½	5	6	7	8	9	10	11	12
List price ... per lb.	$0 75	60	40	.35	26	.23	.21	.20	.19	.18	18	18

Made in City Heads, sizes 3 to 12, inclusive: Regular Heads, 5 to 12, inclusive: Countersunk Heads, 3 to 10, inclusive.

BRIGHTON HORSE NAILS

THE EQUAL OF ANY NAIL MADE EXCEPT THE NEW STANDARD

FIG. 2113.

FIG. 2114.

Size of Nail.... .... Nos.	5	6	7	8	9	10	11	12
List price . . per box	$3.25	3.00	2.85	2.75	2.70	2.65	2.65	2.65

Made in City Heads, 5 to 11, inclusive; Regular Heads, 5 to 11, inclusive; Countersunk Heads, 5 to 12, inclusive; Frost Heads, 5 to 10, inclusive; Goodenough Heads, 6 to 10, inclusive; Large Heads, 8 to 12, inclusive.

"FORT PITT" HORSE NAILS

THE BEST CHEAP NAIL

FIG. 2115.

FIG. 2116.

Made in Regular Heads, 5 to 11, inclusive; Frost Heads, 5 to 10, inclusive.

Size of Nail..... ... .. Nos.	5	6	7	8	9	10	11
List price .. .. per lb.	$0 22	.19	.18	.17	.16	.16	.15

HORSE AND MULE SHOES—CONTINUED

EITHER FORT PITT OR JUNIATA

LIGHT LONG HEEL—IRON OR STEEL

Front

FIG. 2124.

This is same pattern as Light Shoe except that the heels are fully one-half inch longer. The nail holes are likewise set back so as to permit the jumping on of a large calk. Well adapted to use on granite or paved streets for light shoeing.

FRONT

Size	2	3	4	5	6	7
Wgt. ea. Shoe, oz.	19	22½	27	33	39	46
Av. No. in ea. Keg	84	71	59	48	41	34

HIND

Size	2	3	4	5	6	7
Wgt. ea. Shoe, oz.	17	20	25½	30	34	38
Av. No. in ea. Keg	94	80	63	53	47	42

Hind

FIG. 2125.

MEDIUM LONG HEEL—IRON OR STEEL

Front

FIG. 2126.

This shoe is the same pattern and shape as our Medium, with the heels fully a half inch longer, so as to permit the turning up of an extra heavy heel, and is extra strong in the toe, so as to allow the jumping on of a large toe calk. It is well adapted for use on the granite streets of the city.

FRONT			HIND		
Size	Wgt. of Each Shoe, Oz.	Av'ge No. in Each Keg	Size	Wgt. of Each Shoe, Oz.	Av'ge No. in Each Keg
3	28	57	3	24	67
4	32	50	4	28	55
5	38	42	5	34	47
6	45	35	6	40	40
7	53	30	7	46	35
8	58	27	8	52	30

Hind

FIG. 2127.

SNOW—IRON OR STEEL

Front

FIG. 2128.

This is a special shoe made in the Light pattern, well adapted for use in winter to prevent the snow from balling under the horse's foot. It is made with a round bevel, and is also a good shoe to use on muddy roads, especially in clay soil.

FRONT			HIND		
Size	Wgt. of Each Shoe, Oz.	Av'ge No. in Each Keg	Size	Wgt. of Each Shoe, Oz.	Av'ge No. in Each Keg
0	10	160	0	9	177
1	12	133	1	10	160
2	14	114	2	12	133
3	18	90	3	15	107
4	23	73	4	19	86
5	28	58	5	25	64
6	34	47	6	29	56
7	40	40	7	33	48

Hind

FIG. 2129.

Packed in 100-lb. Kegs. Front or Hind separate or Front and Hind mixed. Usual extras for mixed sizes.

FOR LIST OF ADVANCES, SEE PAGE 758

HORSE AND MULE SHOES

EITHER FORT PITT OR JUNIATA

EXTRA LIGHT—IRON OR STEEL

This pattern of shoe is intended for the lightest shoeing, when it is not necessary to calk the shoe. It has the nail holes set farther front than the other patterns shown. A good shoe to use in sandy soils and on smooth roads.

Front

FIG. 2118.

Hind

FIG. 2119.

FRONT

Size	Weight Each Shoe, Oz.	Average No. to Ea. Keg
0	11	145
1	13	122
2	15¼	103
3	18½	86
4	22	73
5	25¾	63
6	30	53
7	35	44

HIND

Size	0	1	2	3	4	5	6	7
Weight of each shoe ... ... ounces	9	10¾	13	16	19½	23	27	32
Average number to each Keg	177	152	123	100	82	70	60	50

LIGHT IRON OR STEEL

This pattern is adapted to country and light shoeing generally. It is a heavier shoe than the extra light, and has the nail holes set farther back from the toe, so as to permit the jumping on of a calk without weakening the shoe. It is a good shoe to use for light driving in the country where the roads are macadamized or rough and stony.

Front

FIG. 2120.

Hind

FIG. 2121.

Size	FRONT W't of Each Shoe, Oz.	FRONT Av'ge No. in Each Keg	Size	HIND W't of Each Shoe, Oz.	HIND Av'ge No. in Each Keg
0	12	133	0	10	160
1	14	114	1	12	133
2	17	94	2	14½	110
3	21	76	3	18¼	88
4	25	64	4	22	73
5	30	53	5	27	59
6	36	44	6	31	51
7	42	38	7	35	46
8	46	35	8	40	40

MEDIUM IRON OR STEEL

This shoe is a larger and heavier shoe than the light. It is well suited for draft horses on the rough and rocky roads of the country. Also well suited for the paved streets of the city, except where it is desired to turn up an extra heavy heel then we recommend our Long Heel Medium.

Front

FIG. 2122.

Hind

FIG. 2123.

Size	FRONT W't of Each Shoe, Oz.	FRONT Av'ge No. in Each Keg	Size	HIND W't of Each Shoe, Oz.	HIND Av'ge No. in Each Keg
0	13	123	0	10½	152
1	17	94	1	14	114
2	20	80	2	16	100
3	25	64	3	20	80
4	29	55	4	24	67
5	35	46	5	29	55
6	41	39	6	34	47
7	47	34	7	39	41
8	55	29	8	45	35

Packed in 100-lb. Kegs. Front or Hind separate or Front and Hind mixed. Usual extras for mixed sizes.

FOR LIST OF ADVANCES, SEE PAGE 758.

HORSE AND MULE SHOES—CONTINUED

EITHER "FORT PITT" OR "JUNIATA" MULE. IRON OR STEEL

FIG. 2130.

This pattern is adapted for service on rocky roads and paved streets. Heavy enough for draft purposes.

Mule Light is made in the three popular sizes only. Adapted for farm use and sandy roads, where it is not necessary to use such a heavy shoe.

MULE			MULE LIGHT		
Size	Weight of Each Shoe	Average No. in Each Keg	Size	Weight of Each Shoe	Average No. in Each Keg
00	8 oz.	200			
0	9 "	178			
1	12 "	133	1	10 oz	160
2	14 "	114			
3	18 "	89	2	12 oz.	133
4	22 "	73	3	15 oz.	107
5	27 "	59			
6	31 "	51			

Packed in 100 lb. kegs. Front or hind separate or front and hind mixed.

LIST OF ADVANCES ON "FORT PITT" AND "JUNIATA" HORSE AND MULE SHOES

Horse Shoes, Extra Light, Light, Medium, Heavy, Long Heel, Short Heel, City Pattern and Snow Shoes, also Mule Shoes, No. 2 and larger.

	Per Keg Advance Over Base
Horse Shoes, sizes No. 1 and smaller	$0.25
Mule Shoes, No. 1	.25
" " " 00 and 0	1.50
Light Driving Horse Shoes, No. 2 and larger	.75
" " " " " 1 " smaller	1.00
Bronco Shoes, Turned Heel, No. 2 and larger	1.25
" " " " Nos. 00, 0 and 1	1.50
" " Flat Heel, No. 2 and larger	.75
" " " " " 00, 0 and 1	1.00
Jack Shoes, all sizes	2 50

Usual extras for mixed sizes, or broken kegs.

"FORT PITT" IRON HORSE AND MULE SHOES

We desire to call your attention to the following merits of the "Fort Pitt" brand of horse and mule shoes:

The Material: Our shoes are made from the very best refined wrought iron. All material entering into our bars is carefully selected and the quality of this iron is such as to render the best kind of service for a horse shoe.

Patterns and Shapes: The most approved ideas of practical horse shoers are embodied in the patterns of the "Fort Pitt" Horse Shoes. Their shape is on correct lines, enabling the smith to fit them with the least possible labor.

The Creasing: The creasing is proper, and so formed as to hold the nail firmly when driven home.

Nail Holes: The nail holes are so arranged with reference to the distance apart at the toe as to meet the requirements of the various localities in which the shoe is sold.

The Concaving: The front shoes are concaved so as to prevent the sole of the hoof from coming into contact with the shoe, thus preserving its elastic properties.

The Punching: Each shoe is punched clear through at proper angles to prevent the nails from sheering from their proper course. All burrs are removed, which is quite an advantage to the smith.

The Finish: The shoes are smooth and uniform, rendered so by the latest improved presser. This makes the shoe attractive to the eye and cleanly to handle.

Inspection. Each shoe is closely inspected when finished and any shoe showing the slightest imperfection in any way is thrown out, thereby insuring every shoe in the keg to be perfect, which adds materially to the cost of production.

Tests: Tests of the "Fort Pitt" Shoes show that they can be twisted like a rope, and bent back double without the slightest tendency to crack. We guarantee that the "Fort Pitt" Shoes will stand any test that any other make of shoe will, and we recommend these shoes to you strictly on their merits.

We also furnish "Fort Pitt" shoes in steel.

ROTARY MOTORS AND THE AEROPLANE

[100 a] Would you please give me the names of several companies who make Rotary motors. Is the rotary engine developed enough to be practical for aerial navigation? What is the best wood to use for constructing a machine? What would the horse power of an engine have to be to carry a monoplane with 130 square feet of surface. What power ought a 1 cy) 4 cycle, air cooled engine with a 4 inch bore and stroke develop? What pitch propeller ought one to have for a machine of the size above mentioned? What length and width? Ought a glider of the size above mentioned rise from the ground when towed by a long rope, at a good rate? Would Shelby tubing be suitable to use for the cylinders of a Rotary engine? Hoping you will answer these questions, I remain.

DENVER, COL. R. H. DONALDSON.

The following companies manufacture rotary motors: Adams Co., Dubuque, Iowa; Aeromotion Company of America, 1611 Wright Bldg., St. Louis Mo., handling the Gnome, which has made such an enviable reputation abroad, being used by Farman, Blerriot and other famous aviators.

The rotary idea has been proved eminently successful.

Spruce and ash are largely used, with bamboo for the lighter parts, the ribs being usually built up or laminated, in quarter inch layers. 130 square feet of lifting surface is rather small. The amount of h. p. required depends on a multitude of other things such as angle of inclination of the surface, curvative and the general head resistance of the machine, so that no figure could be given without specific details. However, at the present state of the art and especially for a beginner it would not be advisable to attempt to fly with less than 30 actual h. p., although claims are made that flight has been accomplished with as low as 7½ h. p., although 14 h. p. is probably the lowest authenticated record. A 4 by 4 inch single cylinder, air-cooled engine ought to develop between 6 and 6½ h. p. The pitch of the propeller depends entirely upon the size and the number of revolutions, width of the blade, power of engine with which it is used, etc. The wider the blade the slower the revolutions necessary and the greater the pitch used.

A glider ought to rise from the ground if properly constructed and towed. Shelby tubing has been used for automobile cylinders, the fact that the engine is to be rotary would make no difference. However, its use for such a purpose is not any means common or considered good practice. If you have never built gasoline engines you had better not start by attempting a revolving cylinder engine, as it is an extremely difficult construction to bring to a successful termination.

E. S. F.

Perkins and His Man-Lifting Kites.

Until recently kites have been regarded as playthings, but at the present time their possibilities for advertising, for war purposes and for landing passengers from ships in distress, are being exploited. The photographs above show the interior of Samuel W. Perkins' kite tent at the recent Harvard Aviation Meet, at the right is shown ons of his specially designed 12 ft. man lifting kites, and at the left is seen Mr. Perkins and a group of his assistants and one of his 13 ft. creations. At the top is a string of 12 ft. man-lifters being raised. These kites lifted many persons during the Meet, up to a height of 125 ft., the passengers being carried in a sling or saddle suspended from the main line by numerous cords at a point below the lowest kite. Half in. to inch life savers' cable of manila is used and of course a windlass is required to hold the tremendous pull which is generated, as from 5 to 15 kites are often flown tandem from a single line and Mr. Perkins holds the record of having flown successfully 33 kites on a single line. Kite flying exhibitions are becoming popular abroad at aviation meets, as they form an interesting diversion and hold the audience during windy spells when the aviators cannot go aloft. These are the first man-lifting kites to be shown in this country, Mr. Perkins having made a special study of the subject for many years. His outfit now comprises over a thousand kites of various types and sizes. Since the Harvard Meet he has been giving exhibitions at the Mexican Centennial Exposition at the request of the Mexican Government.

THAT CHICAGO-NEW YORK FLIGHT

The aeroplane flight for the $30,000 prize offered by the New York Times and Chicago Evening Post turned out rather a fizzle, developing into a personally conducted flight of a Glenn Curtiss man, the other entrants making only technical starts, immediately dismantling their machines and shipping them along the route, to be of assistance to Ely, who had been chosen to start the race on October 9.

Ely, however, only got twenty-one miles from Chicago, after numerous stops for repairs, his last landing damaging his machine considerably, and causing him to abandon the "race." It is to be hoped that the next attempt for this flight will be more of a contest of the sort which the two papers that offered the prize intended.

BROOKINS FLIES 186 MILES CROSS COUNTRY

Walter Brookins, in a Wright biplane, broke the world's cross country distance record on September 29th, by a flight of 186 miles in 5 hours 43 minutes. Two stops, however, were made in the trip from Chicago to the State Fair at Springfield, Ill., and the flight won Brookins $10,000, offered by the Chicago Record-Herald for the feat. A special train which was to guide and race Brookins was easily distanced, and after 2 hours 28 minutes, arriving at Gilman, 81 miles from the start, Brookins alighted to await the train and discover which way to go. At Mount Pulaski, 88 miles further on, a broken water pump and lack of oil forced a descent, after he had been flying at a height of 1,000 feet, and had, he claimed, broken Hamilton's record.

$50,000 FOR CROSS-CONTINENT FLIGHT

William R. Hearst has offered a prize of $50,000 for a flight by a heavier-than-air machine from Boston to San Francisco or San Francisco to Boston. Very few conditions are attached; the contestant may use any machine, but of course must not change machines en route; stops and repairs may be made when necessary; the route is optional, but a stop must be made at Chicago; the flight must be completed in 30 days from the time of starting. The contest closes October 10, 1911.

DIRIGIBLE FLIES FROM PARIS TO LONDON

The first cross-channel flight by a dirigible balloon was made on October 16, the new Clement-Bayard airship, on which a committee of the English Parliament has an option, flying from La Motte Breuil, near Paris, to London. The flight took six hours, and the distance covered was 259 miles. M. Clement, the designer and six others were on board, including a representative of the English Parliament.

AERIAL RECORDS

The following is a table of aerial records to date, exclusive of those made at the International Meet, which occurred too late for complete results to be included. No doubt there will be several additions made to this impressive record of aerial progress, during the International Meet.

Distance.

October 14, 1897—Ader, at Satory, 1,184 feet.
December 17, 1903—O. Wright, at Dayton, in 0.09.59, 852 feet.
December 17, 1904—O. Wright, at Dayton, 2.79 miles.
October 5, 1905—O. Wright, at Dayton, in 0.38.03, 24.01 miles
December 31, 1908—W. Wright, at Auvours, in 2.20.23 1-5, 77.31 miles.
November 3, 1909—Farman, at Mourmelon, in 4.06.25, 149.84 miles.
July 11, 1910—Olieslagers, at Rheims, in 5.03.05, 244 2 miles.
September 2, 1910—Bielovucie, at Issy, in 6.49, 362 miles.

Altitude.

December 18, 1908—W. Wright, at Auvours, Wright, 359 feet.
December 1, 1909—Latham, at Mourmelon, Antoinette, 1,700 feet.
July 8, 1910—Brookins, at Atlantic City, Wright, 6,180 feet.
August 11, 1910—Drexel, at England, 6,750 feet.
September 3, 1910—Morane, at Deauville, 8,471 feet.
September 8, 1910—Chaves, at Brigue, 8,792 feet.
October 1, 1910—Wynmalen, at Mourmelon, 9,121 feet.

PASSENGER-CARRYING RECORDS.

One Passenger.

July 9, 1910—Auburn, at Rheims, in 2.09.07, 85 70 miles.

Two Passengers.

July 9, 1910—Mamet, at Rheims, in 1.33.04, 67.8 miles

Three Passengers.

August 1, 1910—Farman, at Bouzve, in 0.20.00.

Passengers Cross-Country.

June 9, 1910—Frequant, at France, in 2.30.00, 105.6 miles.

BEST SPEED OVER CLOSED CIRCUIT.

July 10, 1910—Morane, at Rheims, Blériot, 66.2 miles per hour.
October 14, 1910—Le Blanc, at St. Louis, Blériot, 67.1 miles per hour

WHY NOT AN AUTO RESERVE?

The National Aeronautical Reserve, though only in its infancy, includes among its members nearly every aviator of consequence, and a score of prominent men interested in aeronautics. Though its organization is not as yet complete, its plans are, of course, the formation of an organization for the furtherance of the establishing of a body of aviators ready to give their services to their country in time of war.

Why not an auto reserve?

What would be of more value to the United States, in the event of war, than a reserve of automobiles, not only for the transportation of troops, but for supplies and army equipment, particularly over territory not reached by railroad?

Perhaps, similar to the Aero Reserve, the Auto Reserve will arise at some race meet.

size weighs 15 lbs. and the 60 H. P. 30 lbs. Prices are $50 and $65.

The propellers are made according to this company's own designs. It is claimed that with the 8-foot propeller at 1,200 revolutions as high as 390 lbs. thrust can be obtained, and with the 6½-foot propeller at 1,200 revolutions 220 lbs. The price of these propellors is $75 for either size. This concern also makes propellors to order, of varied pitch and diameter according to specifications.

A TWO-CYCLE ROTARY AERONAUTICAL MOTOR

By Frederick Weinberg.

The problem with which every designer of engines is confronted is how to attain the greatest power with the least possible weight and consumption of gasoline. At the same time that these important details are being worked out satisfactorily, he is confronted with the fact that this same motor must be of long life and reliable in the sense that there must be freedom of repairs and breakdowns and that it must be accessible from every point of view.

It is undoubtedly true that the simplest design embodying the least possible parts is the best. The 2-cycle rotary motor here described and handled by the Michigan Airship Co., of Detroit, Mich., is claimed to be the solution of this engineering question governed by the desire to simplify and at the same time to conform with the demand of the trade for light weight gasoline engines.

Detroit 2 Cycle Rotary Motor.

An Aeronautical Motor of entirely new design mounted in an aeroplane made by the Michigan Airship Co.

The engine is a one-cylinder in principle which has been divided into two perfectly balanced units and the different working phases of the cycle, as charging, compressing, exploding and expanding, occur in both units exactly at the same time, but in opposite directions. This relieves the center of the engine from any reactional strain under normal conditions. In laying out this engine the revolving principle was employed because the same is believed to be ideal for aeronautical engines.

The accusation has been made against the multiple type of rotary engine that it requires a man of thorough technical knowledge to locate ignition troubles should these occur. In the revolving one-cylinder type this trouble has been eliminated, as both sparks must occur simultaneously in the same place, which is not the case in a multiple cylinder type of engine. Further, this engine has been designed in accordance with the two-cycle principle because the two-cycle engine gives more power for a given weight at the same R. P. M. than the four-cycle and eliminates entirely in the present design the intake valves and simplifies the electrical or mechanical timing arrangement to a great extent.

Two-cycle engines have been censured for their waste of fuel. This has been due to the imperfect design of a valveless engine rather than to the fact that they are of the two-cycle type. In the valveless two-cycle engine the cylinders never get fully emptied and the fresh gas has to be deflected in entering the cylinder during the compression stroke.

In the present design the so-called straight line clearance has been introduced, which is of even a greater volumetric efficiency than the four-cycle, inasmuch as there is no non-skavening space above the piston in which the burned gas can possibly remain. The new charge by the aid of the crank case compression fills the cylinder through the by-pass on the very lowest point and leaves through the head valves after the expansion stroke, and inasmuch as carburetor intake and exhaust ports are located in radial directions to each other the centrifugal force plays a very prominent role in the process of charging and discharging.

Centrifugal force, it has been shown, when improperly applied, reduces the H. P. of the engine to about half. Therefore this rotary engine has been designed in a manner which allows the centrifugal force to sustain the action of the piston on the gas. It helps to throw the charge into the crank case and acts to transfer the same from there into the cylinder and after the expansion stroke into the air.

The pistons describing a true circle around the wrist pin forms during a half revolution of the engine vacuum in the crank case which draws the gas and oil mixture through the hollow crank shaft into the crank case where it is compressed during the next revolution and then enters the cylinder by means of a by-pass, filling the cylinders and driving the remainder of the burned gas out through the exhaust port. A short time before the heat of the piston clears the by-pass, the exhaust valve is opened mechanically and the burned gas rushes out driven by its own pressure Most of the burned gas is driven out in this way before the piston head reaches the by-pass opening and as the exhaust valve is still open at this moment the new charge entering the cylinder gets a chance to assist in driving the remainder of the burned gas out. All charging and discharging processes are materially assisted by the action of the centrifugal force as the gases are steadily working in radial direction from the moment they enter the crank shaft as center and leave the cylinder at the circumference of the circle described by the engine itself.

Construction

The different parts of the engine are machined to fit within one thousandth of an inch and are made on the interchangeable plan through the use of precision of instruments and fixtures.

The crank case is made from aluminum and is cast in one piece. The cylinders are made from cast iron machined all over. The pistons are made from the same grade of iron and carry three rings, two above and one below the wrist pin. The crank shaft is double throw and bored out to reduce weight and to admit gases.

The exhaust valve is located in the head of the cylinder and is made from the same grade of cast iron as that used in making the cylinder and is of sufficient area to empty the cylinder in minimum time. The magneto is driven positively at crank shaft speed which insures easy starting of the engine direct without the aid of battery ignition.

This magneto ignition system is worked out in the simplest way, the high tension current being generated by means of a positively driven magneto and is distributed to a sector and from there to both spark plugs at the same time, firing both cylinder units at the same instant.

Air cooling is employed. The cylinders revolving rapidly through the air and exposed to the cooling draft of the propeller are claimed never to overheat, this system having been used satisfactorily by many manufacturers of revolving engines.

The engine is held together by means of two tension bars terminating at each end in a valve cage retainer by which it is held to the cylinder, and the cylinder to the crank case. It is natural that the action of the centrifugal force keeps the valves seated tightly; consequently in this way the cylinder is in compression instead of in tension, and as the tension bars are of sufficient size to take care of the pressure at high speed with an ample factor of safety, there is no danger whatever of the parts becoming loose or being thrown off.

The very best ball bearings are used throughout. The connecting rod bearings are made from white brass. The lubrication system employed is by spraying, the oil being drawn into the crank case in the form of a fine spray, oiling in this way positively all internal working parts.

This engine can be used to drive all kinds of machinery and to the greatest advantage where lightness in connection with high power is required.

MUST NOT FLY OVER HOUSES

The Royal Aero Club, of England has decided to put a stop to aviators flying over towns or thickly populated districts, and has appointed a committee to inflict penalties upon aviators who may make dangerous flights.

Cross-town flying is not in itself objectionable in the event of a man being able to glide away from the town to a suitable landing place. The real reason for forbidding it is because of the results if an accident should happen in the machine itself, such as a propeller breaking in mid-air, or possibly even the whole engine sifting itself out of the machine, as has happened in one or two instances in France. It is the uncontrolled machine that has to be guarded against, and any machine may become unmanageable at any moment even in the hands of the most skilful aviator.

LE BLANC BREAKS SPEED RECORD

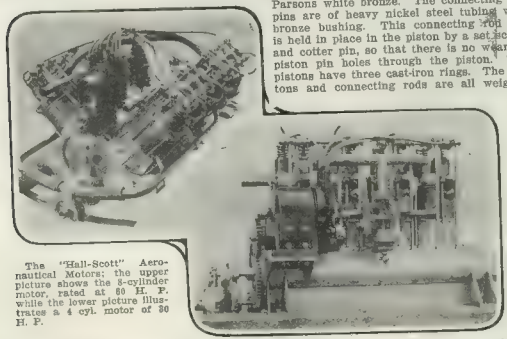
Alfred Le Blanc broke the world's record for aeroplane speed over a measured course by flying a mile in 53 seconds, at Kinloch Field, St. Louis, Mo., on October 14. Using a Bleriot monoplane, he made several speedy miles by way of tuning up before making his record flight.

Chas. K. Hamilton, the aviator, has purchased a Hall-Scott aeronautical motor, of the 8 cylinder v-type. It is rated as 60 h. p., and will be used on the Hamiltonian biplane for exhibition purposes.

Aeroplane guns have at last appeared. Clifford Harmon has equipped his biplane with two 4-inch guns and has successfully shot six oranges from them. They are fired by tripping a lever which opens a trapdoor at the muzzle of the gun, allowing the contents to fall out. The guns are fastened pointing downward, one on each side of the operator's seat.

"HALL-SCOTT" AERONAUTICAL MOTORS

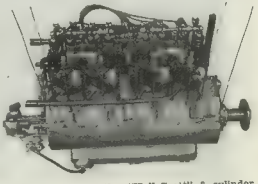
The accompanying cuts illustrate the 8-cylinder and 4-cylinder aeronautical motors manufactured by the Hall-Scott Motor Car Co., 707 Crocker Building, San Francisco, Cal. This concern is at present manufacturing its motor in two sizes, namely, an 8-cylinder 60 H. P. motor, and a 4-cylinder 30 H. P.



The "Hall-Scott" Aeronautical Motors: the upper picture shows the 8-cylinder motor, rated at 60 H. P., while the lower picture illustrates a 4 cyl. motor of 30 H. P.

The designer of these motors is E. J. Hall, who is well known on the coast as the designer of the "Comet" automobile which was very successful in making numerous track records on local tracks. The motor used in the automobile is the same cylinder size as used in the aero motors, 4-inch bore and stroke, and the design is very similar. About a year and a half ago Mr. Hall built the 8-cylinder motor which this company is now marketing and which is similar in every respect, except for minor improvements. The weight of the first motor was 230 lbs., and in a brake test some time ago developed, it is claimed, 82 brake horsepower.

All parts of the motor are made to scale and to jigs so that duplicates will be absolutely accurate. With the exception of the crank cases, shafts, magneto, carburetors and water pumps, all parts for both motors are interchangeable. Macadamite is used wherever possible, as in the crank cases, both upper and lower, cylinder supports, water and oil pump, cam shaft gear and oil pump bevel gears, rocker arms with the bearing surfaces of machine steel, case hardened, set in. Cast iron is used in the cylinder walls, cylinder heads, pistons and piston rings. The crank shafts are made from Lloyd's inspected machine steel, as used in marine and stationary engines. The crank shafts are hand forged from this steel and the connecting rods are drop forgings from die. The crank shafts, after being turned up, are ground to size, milled, and drilled ¾-inch hole. The bearing surface is large, being 1¾ inches in diameter. The main and connecting rod bearings are of Parsons white bronze. The connecting rod pins are of heavy nickel steel tubing with bronze bushing. This connecting rod pin is held in place in the piston by a set screw and cotter pin, so that there is no wear on piston pin holes through the piston. The pistons have three cast-iron rings. The pistons and connecting rods are all weighed and balanced. The valves are of nickel steel, and are seated directly in the heads, so that there is no loss of compression through valve cages or plugs above the valves. The spark plugs are placed in the heads. The water jackets are made of spun copper. A bi-pass is placed between this jacket and the head for water circulation, so that there is no danger of water leakage into the cylinder. A copper asbestos gasket



Top view of the "Hall-Scott" 8 cylinder 60 H. P. motor, showing the arrangement of the valves.

CHAVEZ CROSSES THE ALPS

After several attempts, George Chavez, the young Peruvian aviator who made the world's height record of 8409 feet in his Blériot monoplane, succeeded, on Friday, September 23d, in flying over the Simplon Pass.

Strong winds through the pass had baffled him in his previous attempts, and nearly upset his machine.

On the 23d, however, being satisfied with the weather conditions, he started from Brigue, Switzerland, in his Blériot, soared over the Simplon Pass, and alighted at Domo d'Ossala, Italy. He planed down 3000 feet to the landing place, with his motor turned off, and when only fifty feet from the ground, on turning the motor on again, the wings of his machine collapsed. Chavez was severely injured, and died several days later, on the 27th.

Chavez was competing for a prize of $20,000 offered by the Italian Aviation Society for the trans-Alpine flight from Brigue, Switzerland, to Milan, Italy. Though he did not complete this flight, the committee awarded him $10,000 in recognition of the first crossing of the Alps by air.

That this feat should have been marred by the accident which had such a fatal termination to one of the youngest, most daring, but most skilled of aviators, has occasioned much regret. The accident was like that which happened to an Antoinette monoplane at Rheims, resulting in the death of Wachter, and apparently points to a weakness in monoplane construction.

WHITE FLIES TO WHITE HOUSE

One of the most daring and dangerous flights which have been made in America was that by Grahame-White on October 14, from the Bennings Race track, at Washington, D. C., over the city to the White House. On the way he circled the dome of the Capitol and passed the Washington Monument level with its apex. He landed between the great building of the State, War, and Navy Departments on the one hand, and the low Executive offices on the other, in a narrow street where the slightest deviation would have impaled him upon the spikes of the iron fence around the White House grounds, or smashed him against the granite wall at his left. His biplane rolled 200 feet to a side door of the White House, where White was greeted by several officers of the Army and Navy.

After a luncheon, White started on the return trip, and ascended from the narrow street as skilfully as he had landed, and flew the six miles over the city to Bennings in ten minutes.

The flight caused much comment among Army and Navy officers. Speaking of the flight, General James S. Allen, chief of the Army Signal Corps, said:

"An aerial fleet of a foreign country could invade the United States by night and destroy the capitol of the nation by bombs. This city has positively no defense against them.

"The airship is essential to the army. Military specialists of every country on the face of the earth admit this. As far as the small carrying capacity of the airship is concerned, this advantage is more than overcome by the velocity with which it travels."

General Nelson A. Miles, U. S. A., retired, is of the same opinion. He said:

"It has been suggested that as a means of defense against an aerial fleet the vertical gun would be permissible. To my mind, the vertical gun would be as great a danger to the army firing it as to the aerial fleet, for the shells would fall back to earth and injure the army, while the aerial fleet would have passed on out of reach.

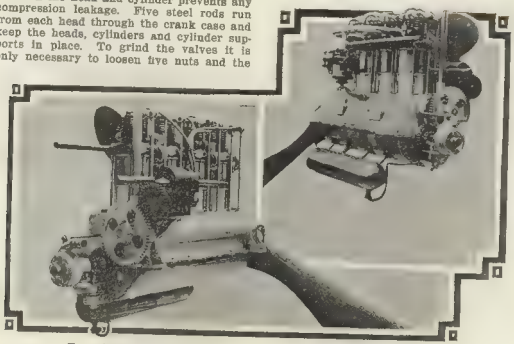
"An aeroplane could annihilate a battleship fleet by passing over it and dropping highly explosive bombs on the decks of the ships. Our battleships should carry aeroplanes on their decks which they could send out as scouts or messengers of death with their terrible bombs to blow up the enemy."

HEIGHT RECORD BROKEN

Henri Wynmalen, a Hollander, broke the height record of 8,409 feet, made by Chavez, by a flight of 9,121 feet at Mourmelon, France. Bitter cold was encountered in the flight, and that a still higher altitude was not reached was due to the fact that the carburetor froze, stopping the engine. Wynmalen then planed down safely, taking 13 minutes.

Wynmalen is one of the most recent of the many aviators who are coming into prominence, having secured his license but a short time ago. As his record-breaking flight was made under official conditions, the record which he made is official.

between the head and cylinder prevents any compression leakage. Five steel rods run from each head through the crank case and keep the heads, cylinders and cylinder supports in place. To grind the valves it is only necessary to loosen five nuts and the



Two views of the "Hall-Scott" 4 cylinder 30 H. P. aeronautical motor.

heads pull off. The push rod of each valve is of steel tubing, the plunger end runs through a small stuffing box, so that there is no leakage of oil from the crank case at this point. The plunger ends as well as the cams are case hardened and then ground to size. The cam shaft is of heavy steel tubing, and the cams are held in place by double pins.

The bottom oil case has three inside ribs dividing it into four compartments. The oil reservoir is cast integral with the bottom case, and an overflow hole from each compartment allows the excess oil to drain back into the reservoir. A gear pump drives the oil back into the cam shaft from which it distributes to the oil case.

On the propeller end of the case a ball thrust is arranged to take either a pull or thrust, so that there is no strain on the main crank shaft bearings. With the exception of cover this is cast integral with

Crank shaft of the 4 cylinder motor.

will develop considerable more horsepower end of case, the ball races being pressed in, and made of machine steel, case hardened and ground to size. A propeller flange is provided. The centrifugal water pump, made of macadamite, keeps the water in circulation.

An eight-cylinder type Bosch magneto is used for the eight-cylinder motor and a Bosch magneto for the four-cylinder. The Stromberg carburetor made of aluminum and fitted with glass float chambers is used. The 60 H. P. motor weighs 235 lbs., and the 30 H. P. motor 135 lbs., complete with water and oil pumps, carburetor and magneto. The prices are $2,000 and $1,350 respectively f. o. b. San Francisco.

This concern also builds radiators and propellers. Two sizes of radiators are being built, a thirty and a sixty-horsepower. They are built up of light copper envelopes, 1½ inches wide. The bottom, sides and tank are of light sheet brass. The 30 H. F

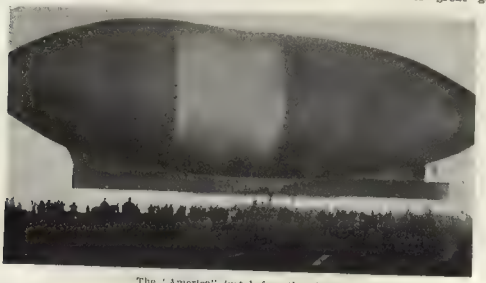
Front view of the "Hall-Scott" Radiator.

WELLMAN FAILS IN CROSS-OCEAN FLIGHT

Walter Wellman, who left Atlantic City on October 15th in his dirigible "America" for a flight across the Atlantic, was rescued, with his crew, on October 18th, by the steamer Trent, 375 miles east of Norfolk, Va. One of the airship's engines was out of commission, and so much gas had been lost that the ship was dangerously near the ocean. When the Trent was sighted Wellman flew distress signals, and after much manouvering, lowered the life boat with which the airship was equipped, pulling to to the Trent. The airship was abandoned, Wellman stating that a larger and stronger one would be built, without an equilibrator, which proved to interfere with steering and transmitted the shock of the waves to the ship with a dangerous violence.

Thus one of the most remarkable flights yet made by an airship was brought to a close. That a tragedy did not accompany the climax is a matter of great good fortune, as the dirigible had been blown far away from the usual transatlantic steamer lanes and was almost outside the range of the coast steamers.

The distance the ship covered is more or less a matter of conjecture, but it is probably somewhere around 800 miles. After leaving Atlantic City, wireless reports followed the airship till it was off Nantucket, where the distance severed communication. The total time in the air was 71½ hours.



The "America" just before the start.

Fig. 2 View of the runway formed on top of the main gasoline tank, showing one of the two engines and the network of ropes, cords, braces, etc.

SOME OF THE GRACEFUL POSITIONS ASSUMED BY THE RIDERS IN THE RACE AT N
PRIZE WINNERS IN THE 15 MILE RACE AT N
BRADLEY AND G. A. NILES AWAITING THE READY TO START
AUTOMOBILE RACE AT NILES

three-quarters of a mile, his rear tire burst and he tore up the track for fifty yards.

Graves then took the lead, but was forced out on account of machine trouble, and Georke had the advantage.

One by one the riders were compelled to quit for repairs and then re-enter. Seymour lost three laps before he could get back. Then throwing on full power he sent his Indian ahead at daredevil speed, catching and passing all but the leaders.

He was rapidly regaining first place and was in the last mile, when at the east end of the track, ready to re-enter the stretch, he went over the bank, but was uninjured, and remounted, finishing with one pedal.

race. He was in the lead all the time until he struck a soft spot throwing him from his wheel. He quickly mounted and went after the bunch, but he was handicapped by the loss of his goggles. He stuck gamely to his work, but on the last lap misfortune again overtook him, his machine casting a tire and putting him out of business.

Louis Steinhouser, a Philadelphia rider on a Bradley, who trailed along third in the hour event, and who was placed in the ten miler which preceded, won a great deal of praise for his riding. His machine, 3½ H. P., was entered against nothing less than 4 and 7 H. P. cycles, but through skillful driving and nerve he won out.

Graves a close second to Seymour in the hour race.

His wonderful performance sent the spectators mad with enthusiasm.

One of the best races of the day was the invitation race, although only three men started. This contest resolved itself into a struggle for second place, Tuebner, on a Merkel, leading all the way. The struggle between Steinhouser, on a Bradley, and Seymour, on his Indian, was a wonderful contest, the men keeping within a few feet of each other for the whole ten miles, Steinhouser beating Seymour out at the tape by about one foot.

The best time made in the time trials was by Raymond Seymour, on an Indian, he making the mile in 59 1-5 seconds and equaling the track record.

The program was unfortunately too long to get through with in an afternoon, and consequently the 25-mile professional event was cancelled and even with this event out it was after 6 o'clock when the last event was started. Considerable delay was occasioned by allowing contestants to repair their wheels at the tape.

Graves on a Merkel took a spill in the thirteenth lap of the fifteen-mile amateur

The crowd which attended was a record breaker, the attendance being estimated at 7,000 spectators.

A summary of events follows:

Ten Miles, for Private Owners—Won by J. Boyd Anderson, on 7 H. P. Indian; second, Frank Seery, 4 Indian; third, Charles H. Thompson, 7 Merkel. Time, 11.34

Ten-Mile National Championship, Open—Won by M. J. Graves, 7 Merkel; second, Irwin Baker, 7 Merkel; third, Walter Georke, 7 Indian. Time, 10.36 2-5.

15-Mile Amateur—Won by W. J. Tuebner, 4 Merkel; second, Harry Nixon, 4 Merkel; third, Walter Georke, 4 Indian. Time, 16.46.

10-Mile Invitation, for factory representatives—Won by W. J. Tuebner, 4 Merkel; second Louis Steinhouser, 3½ Bradley; third, Raymond Seymour, 4 Indian. Time, 11.31.

1-Hour Race, national championship, open—Won by J. Boyd Anderson, 7 Indian; second, Walter Georke, 7 Indian; third, Louis Steinhouser, 3½ Bradley. Distance winner—54 miles, second, 53⅛; third, 51⅛.

1-Mile Time Trial, open—Won by Raymond Seymour, 7 Indian; second, Walter Georke, 7 Indian; third, B. G. Baker, 7 Merkel. Time, .59 1-5.

Special 15-Mile Handicap—Won by Harry Nixon, 4 Merkel, second, Raymond Seymour, 7 Indian; third, B. G. Baker, 7 Merkel. Time, 16.24 4-5.

In the ten-mile invitation race M. J. Graves made a new record for the Point Breeze track, covering the course on the ninth lap in the remarkable time of 53 seconds, beating Barney Oldfield's mile made in his Blitzen Benz on the Saturday previous by 6 3-5 seconds

Jake De Rosier rode a five-mile exhibition, giving a fine display of riding. The times announced were as follows: 1.06 3-5, 1.02 3-5, 1.12 4-5, 1.08 4-5 and 1.26 4-5. The ten-mile race for the championship of Philadelphia was the best event of the day Ten riders lined up for the start and it looked like a record breaking contest, but just beyond the first turn a mix-up occurred and S. A. Goss (Bradley), B. T. Darling (Bradley) and R. S. Martin (R. S.) went down. None of the riders was hurt; the last two however, were compelled to withdraw from the race owing to damage to their machines. Goss resumed, but had more bad luck in the breaking of a belt. He came in third, but did not score, as he had not ridden the full distance when the race had finished. Joe Brown (Bradley) also lost his chance of winning this event owing to a broken belt. The winner of this event, Louis Steinhouser (Bradley), received the Invader Oil Trophy, a silver cup, one of the finest trophies ever offered for a motorcycle contest. Riding their machines the wrong way of the track resulted in two contestants being disqualified and incidentally the elimination of the novice race. Both men were scheduled to start in the novice race, but the disobeyment of the rules left nothing open for the officials to do but disqualify both contestants and call the novice event off.

The summary of the first day follows:

One-Mile National Professional Race—Won by Raymond Seymour (Indian); M. J. Graves (Merkel), second; Walter Georke (Indian), third. Time, 1.06.

Ten Miles, for Private Owners—Won by J. Boyd Anderson (Indian); Frank Seery (Indian), second; S. A. Goss (Bradley), third. Time, 12.34 4-5.

Ten-Mile Invitation Race—Won by Raymond Seymour (Indian); M. J. Graves (Indian), second; Frank Hart (R. S.), third. Time, 10.11 4-5.

Ten-Mile Philadelphia Championship for the Invader Oil trophy—Won by Louis Steinhouser (Bradley); J. Fennell (Excelsior), second; S. A. Goss (Bradley), third. Time, 12.01 2-5.

Five-Mile Exhibition by Jacob De Rosier, champion of the world, on an Indian. Time, 1.06 3-5, 1.02 2-5, 1.13 4-5, 1.08 4-5, 1.26 4-5.

Twenty-five-Mile Amateur—Won by Raymond Seymour (Indian); W. J. Tuebner (Merkel), second; W. Georke (Indian), third. Time, 27.50.

Start of the Ten-Mile National Championship Race.

SATURDAY'S RACES

There were many hair-raising speed events on the second day of the races, but no spills which marked the first day's series. Two riders were thrown, but neither was hurt to any extent. Seymour who made such a good showing on Friday had hard luck on Saturday.

In the second event, the ten-mile National Championship, the riders got off with good speed and were being led by Seymour. In the eighth mile Seymour, who was fully a quarter of a mile in the lead, punctured his rear tire and ripped it off the rim compelling him to withdraw from the race. Graves, who had trouble in getting away, gradually closed the gap between him and the front and sent the crowd to its feet by passing the leaders as they bunched in the stretch on the last lap.

He made the last mile in 59 flat. In this race six of the ten miles were done in less than a minute each. Seymour had done eight miles, until his accident, in 8.00 2-5.

The event of the day was the one-hour race, which was won by Anderson on an Indian. In this race Seymour had more trouble. After covering about 29½ miles and leading Graves, Georke and Collins by about

Result of the F. A. M. Meet

THE ENDURANCE RUN

Never in the history of previous F. A. M. runs was there ever a run that was marked with such torturous and mud wallowing riding as that which characterized the first day's leg of the 1910 F. A. M. Endurance Run. One hundred and twenty-nine riders had entered, and all started but four. Twenty-four of the contestants that started escaped disqualification and more than half of the bunch laid down the first day between Hackettstown and Stroudsburg, N. J.

There was lots of mud, and then some. Imagine trying to go up mountain roads in six to ten inches of mud and clay, where it would tax the power of some machines to get up when the roads are in best of condition. All afternoon farmers en route were busy hauling motorcyclists in their wagons up and down some of the worst roads. In most cases the machines were loaded on the wagons, one on top of the other. Not only was it impossible for some of the machines to get up the hills, but it was also impossible to ride them down hill without spill after spill. A number of machines were hauled down the mountains and in some instances the farmers had to be coaxed to take the motorcycles on their wagons, as they feared they could not hold the horses in going down the steep and muddy roads.

Three Thor machines with R. W. Du Sell, of Aurora, and A. H. Crocker and S. W. Nicholson, both of Chicago, as riders, were the only ones to make a perfect score. No doubt, had the weather been perfect, there would have been a bunch of perfect scores, as the second and third day's runs were over perfect roads and beautiful scenery. But the rain and mud of the first day killed it all. The worst roads were between Vienna and Columbus, in between which lie the towns of Great Meadows and Hope, N. J., names which will never be forgotten by the poor fellows who got stuck in the mud along the line. It was at the latter place that the Hope Motorcycle Club was formed. Had it not been for the bad weather this club would have never been in existence. It consisted of all the riders that came within the vicinity of Hope, but who were unable to continue. Chas. S. Spencer, of Springfield, Mass., was elected president; L. H. Guterman, of New York, captain; and R. T. Wennstroem, New York, secretary. No treasurer was elected as the club didn't have any money. Next morning large straw hats were purchased by the club for the members, some of whom looked more like Texas cowpunchers than motorcyclists. Some of the Hope members went to Stroudsburg, some to Philadelphia, and the remainder to Newark.

Those who had single cylinder machines congratulated themselves and if some of the experienced riders would have had singles there would have been more perfect scores. It was hard work pushing the twins in the mud filled roads, and all along the cry was heard, "Oh, if I only had a single, or something I could pick up and carry." No less than 85 riders were down and out in the Great Meadows and Hope districts and those who did get through had fierce going between Hope and Stroudsburg, the first night's stop. It was a pitiable sight to see some of the riders mounting their machines after taking a spill only to go down again within a few yards.

Nineteen single cylinder machines finished as against five twins. More battery machines finished than magneto mounts, but much of short circuiting trouble which occurred with the magnetos was due to thoughtlessness of the riders to fit their magnetos with waterproof covers. Some of the boys wrapped handkerchiefs around them, and threw oil over them to keep out the water.

The following is an official list of the twenty-five riders who finished: R. W. Du-Sell, Aurora, Ill. (Thor), 1000; A. H. Crocker, Chicago, Ill. (Thor), 1000; S. W. Nicholson, Chicago, Ill. (Thor), 1000; Henry Sturgis, Bridgeport, Conn. (Excelsior), 988; Glenn G. Crandall, Akron, Ohio (Indian), 987; Shelton Sturgis, New York (Excelsior),

A word may be said regarding the inefficient method of timing the races at this meet as well as other large motorcycle races. As long as stop watches operated by human beings are employed, it will be impossible to obtain results which can be relied upon as being accurate. In too many instances the times of the different time keepers vary by a few seconds, so that the average time is taken of the different watches in order to arrive at an official time. Of course, the times are claimed to be official, due no doubt, to fact that the officials of the race gave them out, but as far as the accuracy of the same is concerned, there remains room for doubt. The only accurate method and which will not be governed by mind over matter is by the use of electrically operated instruments whereby a record is made on paper and from which the times can be verified. It is hoped that in the future the timing of all motorcyling events of prominence will be by mean of mechanical devices so that the records can be looked upon as authentic.

On Sunday morning at 9 o'clock a large crowd of riders headed their machines for Atlantic City, closing one of the most successful meets in the history of the Federation. It has done much toward popularizing the sport and increasing the membership of the F. A. M., particularly in Philadelphia and surrounding towns.

F. I. WILLIS RE-ELECTED F. A. M. PRESIDENT

At the business session of the National Assembly of the F. A. M., held in the rooms of the Century Club, Philadelphia, Pa., President F. I. Willis was unanimously re-elected. He was nominated by R. S. Morton, of New York, who, in speaking of Mr. Willis, said that he had taken hold of the organization when it was very young, and although handicapped in his work had succeeded in placing it on a strictly business basis

C. C. Wilber was unanimously re-elected Vice-President of the Eastern District, without opposition. Vice-President Hughes, of the Southern District, who declined renomination, was succeeded by L. W. Thompson, of Louisville, Ky.

In declining the nomination for Vice-President of the Western District, F. B. Hart, of Chicago, stated that he was too much in the trade to accept, as trade jealousies might hamper him in his work. P. B. Whitney, of Chicago, was nominated and unanimously elected.

When nominations for Vice-President of the Pacific Coast District were in order it was found that the district had apparently nominated C. M. Frink, who was Vice-President last year; but W. G. Collins, President of the San Francisco Club, stated that no notice had been sent out of the Pacific Coast meeting, and that his club, the City of San Francisco, and in fact, the entire State were in favor of A. W. Green. Both Mr. Frink and Mr. Green were nominated, and Mr. Green was elected.

When nominations for Secretary were called for it was suggested that the offices of Secretary and Treasurer be combined, and after much discussion the convention accepted the change and elected Dr. G. B Gibson, who has been Treasurer for the past eight years

The elections for the Board of Governors resulted as follows: W. G. Collins, of San Francisco, and G. H. Hamilton, of Indianapolis, for three years; C. F. Ball, of Indianapolis, and E. M. Estabrook, of Bangor, Me., for two years; E. L. Buffington, of Providence, R. I., and Dr. J. P. Thornley, of New York, one year.

The constitutional members of this board, which governs the F. A. M. between the rational assemblies are F. I. Willis, President, and R. G. Betts and Earl L. Ovington, past presidents.

NOBBY TREAD TIRES FOR MOTORCYCLES

The Nobby Tread Tire of the Morgan & Wright Co., of Philadelphia, Pa., which we described in our February, 1910 issue, page 222, may now be obtained for motorcycles, and the motorcycle tire should repeat the success which the automobile tire has had. In crossing car tracks, which have caused many a "spill", the new tire will prove especially valuable, as the side row of knobs will catch the track and enable the wheel to climb it instead of sliding. In sand and mud the knobs, reaching down, give a grip where tires with smaller projections slip and slide.

R. S. WAGONETTES

The Reading Standard Co., of Reading, Pa., has placed several wagonettes with electric light companies for their "trouble men." The Brooklyn Edison Electric Co. has been using a wagonette for six months in the Coney Island district, with such success that two additional machines will be purchased. Inspired by the success of other companies with wagonettes, the New York & Queens Electric Light & Power Co., of Long Island City, has purchased one for their trouble man, while the Boston Elevated Railway Co., of Boston, Mass., has ordered four wagonettes of special construction, with seat for an extra passenger, for their repair department.

The announcement is made by the American Locomotive Company that a new model motor truck of five-ton capacity is to be added to the Alco line. The three-ton Alco truck will continue to be made. The five-ton trucks are expected to be ready for delivery in a few months

987; W. S. Harley, Milwaukee, Wis. (Harley-Davidson), 986; Stanley T. Kellogg, New York (Excelsior), 985; George H. Squier, Chicago, Ill. (Thor), 978; R. J. Bishop, Rochester, N. Y. (Indian), 964; Guy M. Greene, Chicago, Ill. (M. M.), 975; R. E. Waymire, Englewood, Ohio (New Era), 904; Wendle White, Reading, Pa. (R-S), 930; Walter Davidson, Milwaukee, Wis. (Harley-Davidson), 916; A. R. T. Oberwegner, Toledo, Ohio (Yale), 898; Roy Bowser, Pullman, Ill. (M. M.), 874; M. W. Kibbe, Springfield, Mass. (Indian), 868; B. A. Swenson, Providence, R. I. (Indian), 854; George Lyon, Chicago, Ill. (M. M.), 852; Frank Oliernan, Milwaukee, Wis. (Harley-Davidson), 846; Herman H. Sill, Cleveland, Ohio (Excelsior), 786; Alex. Klein, Philadelphia, Pa. (Harley-Davidson), 712; C. C. Palmer, Chalmers, Ind. (Indian), 712; E. S. Eckel, Washington, N. J. (Indian), 686. The following riders did not reach the first night's control until next morning, but finished the run. They received honorable mention: Albert Lehman, Philadelphia (Harley-Davidson); C. G. Price, New York (Merkel); H. J. Schueneman, Philadelphia (Minneapolis Two-Speed); A. E. Manchester, Providence (Merkel), and George C. McIntire (Excelsior).

The Excelsior and the Harley-Davidson teams won second and third places respectively when comparing the number of scores of those who finished with the total number of entries. Three M. M. machines, the only three entered, reached Philadelphia on Wednesday night. Next come the Indians, five of which finished. A Reading-Standard and a New Era machine also finished.

The second and third days' run was easy sailing compared to that long to be remembered first day. The route from Stroudsburg was over fine road with the exception of one stretch of two or three miles between Passaic and Newark, and which was being repaired.

The M. M. Team.

Reading from left to right they are: Geo. Lyons, Roy Bowser and G. M. Greene. The latter is manager of the M. M. store at 2127 Michigan Avenue, Chicago, Ill. This team was the only one to finish, all riders starting.

All the boys that were in Newark Tuesday night had a good time at the smoker given under the auspices of the Jersey Motorcycle Club. There was a boxing bout, with two youngsters as contestants, which furnished lots of amusement, vaudeville, and lots of eats and drinks. Speeches were made by President Willis and Messrs. Hamilton and Morton, also by others of the Great Meadows and Hope Clubs.

On Wednesday a crowd collected in front of the official garage near the clubrooms, to welcome home the riders. Cheer after cheer went up as the various teams rode up Broad street, and some of the riders certainly looked as if they could stand a good bath and a long sleep. But as a whole the riders were satisfied, as most of them found plenty of amusement in the run even though at some times the outlook was most discouraging. Much credit is due the tire companies who had special cars follow the contestants, giving them all the assistance required.

On Thursday afternoon quite a bunch of riders made the Valley Forge trip, and in the evening the smoker, which was held at Turf Villa, was well attended, and besides free drinks and sandwiches, a well arranged musical and vaudeville program helped to make the evening most enjoyable. One of the F. A. M. members, who is a professional contortionist, did some stunts which were heartily applauded. A few of the boys also did stunts on their machines trying to negotiate the River Drive, after partaking of too much amber fluid. But they had a good time—so who cares!

FRIDAY'S RACES

On Friday at 2 P. M. the first day's series of races was started on the one mile track at Point Breeze. A fair sized crowd was in attendance and the track was in better condition than ever before. The stretch along the grand stand was well oiled and allowed the riders to make terrific speed, but on the short turns the track was pretty well torn up resulting in a number of spills in which the machines were more or less damaged, but luckily the riders escaped with nothing more than a severe shaking up.

In the one-mile dash W. H. Robinson, riding a twin Reading-Standard, left the track at the first turn while going at full speed and landed in a ditch four or five feet below the level of the track. The rear wheel of Robinson's machine was smashed, but he escaped injury.

Seymour on his 7 H. P Indian and Graves on a 7 Merkel were the stars of the day Seymour made a new mark by doing 25 miles in 27.50 which is claimed to be the fastest time for the distance ever made by a motorcycle on a circular track.

POUGHKEEPSIE RACES

The Poughkeepsie Club's races which had been postponed from Decoration Day, were held July 23rd, at the Hudson River Driving Park. In the 25 mile handicap it took Goerke, who won, 9 miles to pass Teubner, the other scratch man, who got off in the lead. At the close of the 5 mile handicap Gustafson's machine caught fire and was disabled.

The summaries:

One-mile novice (handicap), standing start—Won by Harry W. English (4 Excelsior), 4 seconds; A. J. Burger (4 Excelsior), 10 seconds, second; Fred Vella (6 Indian) scratch, third; time, 1.39 2-5. Five-mile, free-for-all (handicap), standing start—Won by Walter Goerks (7 Indian), scratch; Chas. Gustafson (7 Indian), scratch, second; Frank Seery (4 Indian), 10 seconds, third; time, 5.48 2-5. One-mile private owner (handicap), standing start—Won by Jay LeRoy (5 Indian), 8 seconds; Alfred Brown (4 Reading-Standard), second; Frank Seery (4 Indian), third; time, 11.35. Three-mile for single cylinder machines only (handicap)—Won by Harry W. English (4 Indian), 80 seconds; Walter Goerke (4 Indian), scratch, second; Alfred Brown (4 Reading-Standard), 60 seconds, third; time, 4.05 2-5. Three-mile for Poughkeepsie Club members only (handicap), standing start—Won by Jay A. LeRoy (4 Indian), scratch; G. Price (6 Merkel), scratch, second; A. J. Burger (4 Excelsior), third; time, 4.23 2-5. One-mile free-for-all, standing start—Won by A. G. Chapple (7 Merkel), W. J. Teubner (7 Merkel), second; Walter Goerke (7 Indian), third; time, 1.05. Ten-mile free-for-all (handicap), standing start—Won by Charles Gustafson, Jr. (4 Indian), 80 seconds, A. G. Chapple (7 Merkel), scratch, second; William Robinson (4 Indian), 80 seconds, third; time, 1.239 2-5. Slow race—Won by Herman Sager (New Era), one-eighth of mile; time, 3.25. Five-mile Dutchess County (handicap), standing start—Won by Clinton G. Price (6 Merkel), scratch; J. A. LeRoy (5 Indian), 40 seconds, second; Fred Vella (5 Indian), 50 seconds, third; time, 7.09 1-5. Twenty-five-mile free-for-all (handicap), standing start—Won by Walter Goerke (7 Indian), scratch; Charles Gustafson, Jr. (4 Indian), 160 seconds, second, time, 26.46.

400-MILE ENDURANCE RUN

At the regular weekly meeting of the Reading Motorcycle Club, the Competition Committee of the club was authorized to lay out a route for a 400-mile endurance run to take two days. It is probable that the course will be over the mountains to Wilkes-Barre and return, and will be a very severe test and a real endurance contest. Competition Chairman will be asked for sanction for Saturday and Sunday, September 10 and 11. It is expected that riders from all over the East will participate. The entry fee will be $5 and the survivors' medals certainly will be the best that have been put out this year.

LONG MOTORCYCLE TRIP

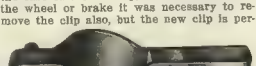
C. M. Stafford, of Denver, Col., recently made a long and highly successful trip on his 6 H. P. twin R-S from Denver, Col., to Windom, Kan., covering a distance of 1317 miles without a breakdown or adjustment of any kind, save the repair of one puncture. His route led him through Colorado Springs, where he visited Manitou and the Garden of the Gods, Pueblo, Las Animas, Larned and Windom. Returning, he went to Dodge City, then took the Santa Fe trail to Las Animas, then to Colorado Springs and Denver. He stated that, though the roads were good in places, there was plenty of mud and sand to try the machine, and its performance was an added pleasure to the trip. The same rider states that he rode a 1909 3 H. P. over 5000 miles, repairs amounting to a seat spring and a contact spring and screw.

IMPROVEMENTS IN THE NEW DEPARTURE COASTER BRAKE

The New Departure Mfg. Co., of Bristol, Conn., have made two improvements in their internal expanding hand "New Departure" coaster brake for motorcycles, consisting of a new arm and clip. The new arm is heavier and stronger than the old, and is so

The "New Departure" Coaster Brake.

shaped that it may be attached to any make of motorcycle without interference with the frame. The clip has also been made stronger, and the design altogether changed. In the case of the old clip, in order to remove the wheel or brake it was necessary to remove the clip also, but the new clip is permanently fixed to the frame and extends downward, forming a reinforced pocket into which the brake arm easily fits in such a way as to entirely relieve leverage strains. In removing the brake for cleaning or repairs, the clip is not disturbed. The brake arm is quickly slipped out of the pocket, saving time, labor and patience. The necessity of making adjustments and using set screws, lock nuts or other devices is entirely obviated.



The new clip for the "New Departure" Coaster Brake Arm.

W. H. Gilmer, of Anderson, S. C., made a record-breaking mail delivery recently, covering an R. F. D. route 24 miles long, over rough river and creek hills, making 65 stops, in 1 hour and 50 minutes. His machine is an R-S 2 H. P.

DE ROSIER BREAKS RECORD

One world's record and one track record were broken at the Wandamere Motordrome, Salt Lake City, July 23rd. Jake De Rosier rode eight miles in 5 minutes, 51 seconds, breaking the world's record by 4 seconds, and running the fastest mile for the track in 44 3-5 seconds.

The trade riders rode an interesting race. Chas. Balke, who lost half a lap at first showed great speed in getting to the front and lost by only a few feet.

The match race between Mitchell, Samuelson and De Rosier had a spectacular finish, De Rosier not opening up until the last lap when he finished with great speed a quarter of a lap ahead.

The summaries:

Three-mile open, amateur—Claflin, Indian, first; Archibald, Excelsior, second; Galeazzi, Merkel, third; time, 3.33. Four-mile amateur for trade riders—Seymour, Indian, first; Balke, Indian, second; Ward, R-S, third; time, 3.33 4-5 Five-mile professional, invitation Senhouse, Indian, first, Clayton, second; McCormack, third Six-mile, open to all, amateur handicap—Claflin, first; Seymour, Indian, second; Ward, R-S, third; Thomas, fourth, time, 4.34. Five-mile match race—DeRosier, first; Samuelson, second; Mitchell, third; time, 5.13 1-5. Three-mile automobile record trial—Bert Smalling; time, 2.52 3-5. Eight-mile professional handicap—DeRosier, first; other places undecided by judges, time, 5.51.

RAIN CUTS 24 HOUR RACE TO 15 HOURS

The 24 hour motorcycle race which was started at the Guttenburg Motordrome on July 16, turned out to be a 15 hour race rain stopping it for 9 hours. The distance was 686 miles, and the race was won by Ferdie Mercier and L. H. Suterman, using Indian machines. The low average, 45.7 miles per hour, was due to the rain. The race was hard on both men and machines.

The prizes were numerous. The winning team got a prize valued at $140. Seery and Robinson, on Indians, who came in second 656 miles, got a $90 prize; Kellog and Sturges, on Excelsiors, third, 636 miles, $50; Chapple and Lyons, on Merkels, fourth, 631 miles, $30; Hubschmidt and Wennstroem, on Indians, fifth, 584 miles, set of tires. Hart and Swan did 604 miles on their Reading Standards, but went out in the 14th hour; Voelker and Stubner, N. S. U., did 522 miles till they went out in the 13th hour; Campana and Cocchi on Peugeots, went out in the 11th hour, having covered 363 miles; and Wood and Harry, Reading Standard, went out in the 4th hour, with 92 miles.

REMARKABLE MOTORCYCLE TRIP

Claude Ward, of Cedaredge, Colo., recently made a quite remarkable trip on his R-S motorcycle. He has been making tours of the West, and his latest jaunt was from Colorado Springs to Cedaredge, a distance of 382 miles, being covered in 36 hours. His record time was 6 hours 15 minutes for the 125 miles between Colorado Springs and Salida. From Salida he went to Hartsel, then to Buena Vista, striking some bad roads, and then turned for Salida again. He then crossed over Monarch Pass, finding it impossible to ride in places on account of the rocks, bumping his engine several times, to Gunnison, where he spent the night. The next day he had to repair a bad puncture in his rear wheel, and went through Sapinero, Crawford and Hotchkiss to Cedaredge, finishing one of the most strenuous trips on record. The route from Salida to Crawford had never been covered by a motorcycle before, and from Mr. Ward's account of it, won't see another motorcycle very soon. The performance of his machine was very pleasing, as he never even cleaned a spark plug, and the only repairs that were necessary was to replace the bolt between the frame lug and the top of the cylinder, which was broken by the severe jolting the machine received.

THE READING MOTORCYCLE CLUB RELIABILITY CONTEST

On Sunday, July 24, the Reading Motorcycle Club held their first open contest. It was in the form of a reliability contest of 150 miles, the tour being from Reading, Pa., to Willow Grove, Pa., with four checking stations each way. Although the entry list was small, the class of riders entered was above the average which will be found from the fact that out of ten entries, there were nine perfect scores. This is an excellent showing when one considers that for the 75 miles return trip only 3 hours and 45 minutes was allowed, which included time for checking at four points.

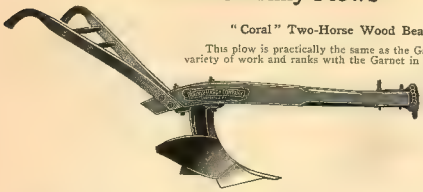
The riders and their mounts are as follows: H. C. Becker, R-S, 1000 points; James Mayo, R-S, 1000 points; Edw. Buffum, Merkel, 1000 points; J. Deysher, Merkel, 1000 points; A. E. Bruderreck, R-S, 1000 points; J. M. Dunkle, R-S, 1000 points; R. A. Bergen, R-S, 1000 points; H. R. Williams, Indian, 1000 points; J. H. Rull, Merkel, 1000 points; J. T. Stanford, Merkel, did not check at last station.

It was a very enjoyable run from every standpoint, and the arrangements were so complete and satisfactory to the riders that it bids fair to make future runs of the Reading Motorcycle Club a success.

MOTORCYCLES DELIVER FIGHT EXTRA

The Spokane, (Wash.) Herald, in getting out its extra on the Jeffries-Johnson fight used a number of motorcycles, and supplied every news stand in Spokane twenty minutes before any other paper. The editor was much pleased with the experiment, and it may be adopted as a permanent feature of the paper.

The Brinly Plows

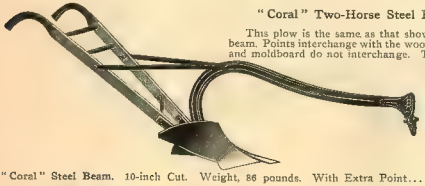


"Coral" Two-Horse Wood Beam Steel Plows.

This plow is practically the same as the Garnet, and will do the same variety of work and ranks with the Garnet in being considered the lightest draft plow manufactured. It is not used extensively in the heaviest lands because it is considered rather large for this work, but it is a great seller in the medium and light soils.

Each

"Coral" Wood Beam. 10-inch Cut. Weight, 63 pounds. With Extra Point..... $10.00

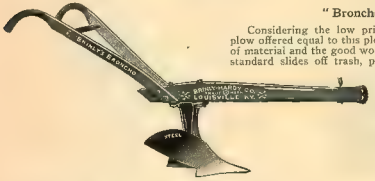


"Coral" Two-Horse Steel Beam Steel Plows.

This plow is the same as that shown above except with steel beam. Points interchange with the wood beam plows, but landside and moldboard do not interchange. The sales on this plow are growing very rapidly, and it is a favorite two-horse plow throughout the Southern States. Splendid for new ground, cane land and sod when furnished with the landside cutter.

Each

"Coral" Steel Beam. 10-inch Cut. Weight, 86 pounds. With Extra Point..... $12.00



"Broncho" Steel Plows.

Considering the low price at which it is sold, there is no plow offered equal to this plow on account of its strength, quality of material and the good work it does in a variety of soils. Bevel standard slides off trash, preventing choking. Handles up on beam out of way so as not to catch trash. This enables plowman to plow close to young plants without danger of left hand handle covering with clods which often occurs when handles come down to moldboard and landside. Beams and handles nicely varnished with ends tipped in red paint.

Each

"Broncho" Steel, Wood Beam. 7-inch Cut. Weight, 36 pounds. With Extra Point..... $3.00

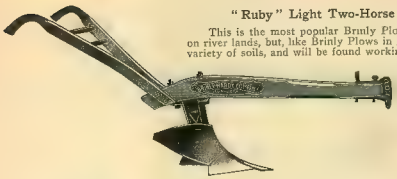
Broncho Cast Plows.

This is the same plow as above except with cast moldboard and point to make it suitable for work in light sandy soils. The toughest grade of iron is used in the manufacture of this plow, and it will be found stronger and more durable than any plow of similar size and kind. Beam and handles nicely varnished with ends tipped in red paint.

Each

"Broncho" Cast, Wood Beam. 7-inch Cut. Weight, 38 pounds. With Extra Point..... $2.50

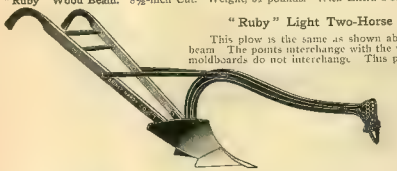
The Brinly Steel Plows



"Ruby" Light Two-Horse Wood Beam Plows.

This is the most popular Brinly Plow made, and is used extensively on river lands, but, like Brinly Plows in general, it is adaptable to a great variety of soils, and will be found working in the lightest sand as well as the heaviest of black muck. Although considered a light two-horse plow, the Ruby is often pulled by one in breaking up as well as in cultivating. Frequently used as a new ground plow when fitted with the landside cutter

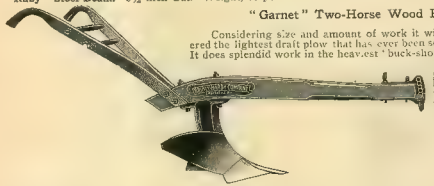
	Each
"Ruby" Wood Beam. 8½-inch Cut. Weight, 54 pounds. With Extra Point..	$8.00



"Ruby" Light Two-Horse Steel Beam Plows.

This plow is the same as shown above except it is made with steel beam. The points interchange with the wood beam, but the landsides and moldboards do not interchange. This plow was made especially for the "buck-shot" lands of the Mississippi Delta country, but will do good work in almost any soil. Very popular as a new ground plow when fitted with a landside cutter.

	Each.
"Ruby" Steel Beam. 8½-inch Cut. Weight, 75 pounds. With Extra Point	$10.00



"Garnet" Two-Horse Wood Beam Plows.

Considering size and amount of work it will do, this plow is considered the lightest draft plow that has ever been sold in the Southern States. It does splendid work in the heaviest "buck-shot" lands of the Mississippi Delta, and in any soil except sticky, waxy, prairie land. It is most extensively used on river lands. Although quite large, this plow pulls so light that it is often used with one mule in cultivating cotton and corn. Furnished with the famous Brinly Duckbill Point

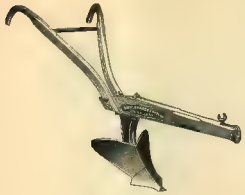
	Each
"Garnet" Wood Beam. 9½-inch Cut. Weight, 62 pounds. With Extra Point	$9.50

"Garnet" Two-Horse Steel Beam Plows.

This plow is the same as shown above except with steel beam. Points interchange with wood beam, but landsides and moldboards do not interchange. Like the Ruby, it was gotten up especially for the "buck-shot" lands of the Mississippi Delta country but is also used extensively in the "hill country."

	Each
"Garnet" Steel Beam. 9½-inch Cut. Weight, 84 pounds. With Extra Point	$11.50

The Brinly Steel Plows



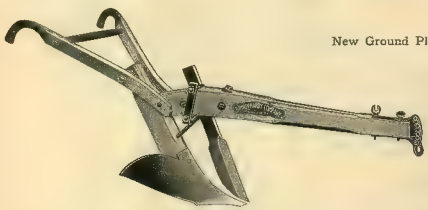
"Broncho" Middle Breaker Plows.

One Horse.

Where a small one-horse middle breaker is wanted this plow will prove highly satisfactory. For this style plow it will be noticed the price is very reasonable. It has the same stock as the Broncho turning plows, and a person possessing a Broncho turning plow need only purchase the plow bottom of the Broncho Middle Breaker in order to have two plows.

Each.

"Broncho" One-Horse Middle Breaker. Wood Beam. 7-in. Cut. Weight, 37 lbs. With Extra Point.. $6 00



New Ground Plows.

These plows are very strong and do splendid work. The mold is the proper shape and has the steel bar welded on the side next to the land. The colter is reversible, having a double edge so it can be used as a straight or jumping colter.

Each.

No. 3—New Ground. Wood Beam. 6-inch Cut. Weight, 65 pounds. . $7.00
No 4— " " " " 7 " " " 70 " 8 00

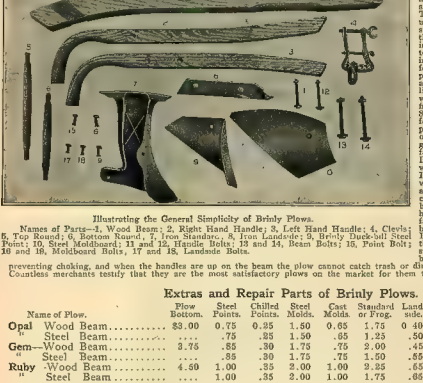
"Broncho" One-Horse Subsoil Plows.

This style plow has been on the market for over twenty-five years, and is to-day recognized everywhere as the standard and best subsoil plow made. Used in furrow behind turning plow or middle breaker with one horse and sometimes with two horses in plowing very deep. Has unbreakable malleable iron upright. Removable mole-shaped steel point, causing plow to pull very light. It has the same stock as the Broncho turning plow and Broncho middle breaker, and those who have either of these plows and want a subsoil need only purchase the Broncho Subsoil bottom

Each

"Broncho" One-Horse Subsoil. Wood Beam 5-inch Cut Weight, 32 pounds With Extra Point ... $4 25

The Brinly Plows



Illustrating the General Simplicity of Brinly Plows.

Names of Parts—1, Wood Beam; 2, Right Hand Handle; 3, Left Hand Handle; 4, Clevis; 5, Top Round; 6, Bottom Round; 7, Iron Standard; 8, Iron Landsider; 9, Brinly Duck-bill Steel Point; 10, Steel Moldboard; 11 and 12, Handle Bolts; 13 and 14, Beam Bolts; 15, Point Bolt; 16 and 18, Moldboard Bolts, 17 and 18, Landside Bolts.

A strong feature of the Brinly Plow is its simplicity. Ever since first made in the year 1830 they have stood first wherever sold for strength, quality and good work. The best material obtainable is used in their construction. Their strength and durability is due to their general style of construction in addition to the quality of the material used. They are the simplest in construction, being composed of fewer parts than any make of plows known. They are adapted to all soils and are noted for their lightness of draft and the ease with which they are handled. In field trials they have taken over 900 premiums. The combination features whereby different style plows and implements can be used on the same plow stock are of great saving in expense to the farmers. The Brinly Duck-bill Patent Steel Plow Point will outwear several of any other make. It has the thickness of metal right where the wear and tear comes on a plow point. Shape and form of construction of the Brinly Duck-bill Point enables it to go into hard ground and pierce hard surfaces when all others fail. The broad top of the standards used in Brinly wood beam plows supports the beam and enables them to withstand strains. The bevel standards slide off the trash, preventing choking, and when the handles are up on the beam the plow cannot catch trash or dirt that passes over the moldboards. Countless merchants testify that they are the most satisfactory plows on the market for them to sell.

Extras and Repair Parts of Brinly Plows.

Name of Plow.	Plow Bottom.	Steel Points.	Chilled Points.	Steel Molds.	Cast Molds.	Standard or Frog.	Landside.	Stock.	Beam.	Handles.	Clevis.
Opal Wood Beam	$3.00	0.75	0.25	1.50	0.65	1.75	0 40	2 00	0 90	0.60	0.15
" Steel Beam	....	.75	.25	1.50	.65	1.25	.50	....	3.00	1.00	.35
Gem—Wood Beam	3.75	.85	.30	1.75	.75	2.00	.45	2 00	.90	.90	.15
" Steel Beam	....	.85	.30	1.75	.75	1.50	.55	....	3.00	1.00	.35
Ruby Wood Beam	4.50	1.00	.35	3.00	1.00	2.25	.65	3.75	1.25	1.00	.35
" Steel Beam	....	1.00	.35	2.00	1.00	1.75	.65	....	3.50	1.10	.60
Garnet—Wood Beam	5.50	1.25	.40	2.50	1.40	2.50	.70	3.25	1.40	1.15	.45
" Steel Beam	....	1.25	.40	2.50	1.40	2.00	.80	....	4.00	1.25	.60
Coral—Wood Beam	6.00	1.40	.40	2.65	1.50	2.50	.70	3.25	1.40	1.15	.45
" Steel Beam	....	1.40	.40	2.65	1.50	2.00	.80	....	4.00	1.25	.60
Broncho—Steel	1.75	.40	....	.60	....	1.00	.40	1.65	.75	.75	.15
" Cast	1.25	....	.20	....	.50	1.00	.40	1.65	.75	.75	.15
Blackland—Steel Beam—											
7-inch Cut	....	1.10	....	2.50	....	2.00	1.00	....	3.50	1.25	60
8 " "	....	1.15	....	2.75	....	2.00	1.00	....	3.50	1.25	.60
9 " "	....	1.25	....	3.00	....	2.00	1.00	....	4.00	1.25	.60
Prairie Wood Beam	5.75	1.00	.35	2.25	.65	2.00	.50	2.00	.90	.90	.15
Mixed Land—10-inch	....	1.80	....	3.50	....	1.75	1.25	....	3.50	1.50	.75
" " 12 "	....	2.25	....	4.00	....	1.75	1.50	....	3.50	1.50	.75
" " 14 "	....	3.75	....	5.00	....	2.00	1.75	....	4.00	1.50	.90

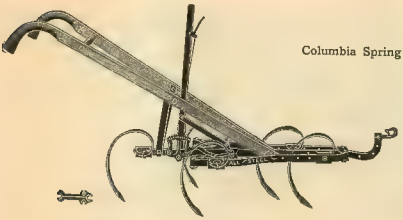
Extras and Repair Parts of Brinly Middle Breaker Plows.

Name of Plow.	Steel Plow Bottoms.	Steel Points.	Steel Molds, Per Pair.	Standard or Frog	Slides, Per Pair.	Stock.	Beam	Handles.	Clevs.	Steel Pin.
Middle Breaker—S. B. 10-inch	....	$1.75	3.25	2.25	1.00	....	4.00	1.50	0.60	0.25
" " " 12 "	....	2.00	3.50	2.25	1.00	....	4.00	1.50	.60	.25
" " " 14 "	....	2.25	4.00	2.25	1.00	....	4.00	1.50	.60	.25
" " W. B. 10 "	....	$6.75	1.75	3.25	2.50	1.00	2.75	1.15	.90	.35	.25
" " " 12 "	....	7.50	2.00	3.50	2.50	1 00	3.25	1.40	1.15	.45	.25
" " " 14 "	....	8.75	2.25	4.00	2.50	1.00	3.25	1.40	1.15	.45	.25
" " " 8 "	....	5.00	.85	2.50	2.00	.75	2.00	.90	.90	.15	.15
" " " 9 "	....	5.75	1.00	2.75	2.00	.75	2.00	.90	.90	.15	.15
Broncho Middle Breaker. 7 "	....	4.00	.60	1.50	1.50	.60	1.65	.75	.75	.15	.15

Extras and Repair Parts of Brinly New Ground and Subsoil Plows.

Name of Plow.	Plow Bottom.	Steel Point.	Standard.	Stock.	Blade.	Beam.	Handles.	Upright.	Collar, Complete.	Connect Rod.	Clevis.
New Ground—No. 3	....	....	....	....	$2.00	1 40	1.00	1.25	2.00	.40	.45
" No. 4	....	....	....	....	2.25	1.50	1.00	1 50	2.00	.40	.45
Broncho Subsoil	$2.50	.60	1.75	1.65	....	.75	.75	....	....	....	.15

Brinly Cultivators and Harrows



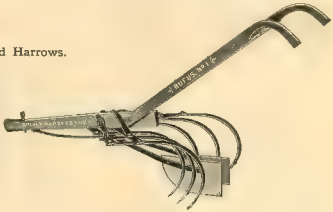
Columbia Spring Tooth Cultivators.

The teeth on this cultivator can be set at any desired angle. It has two sets of handle braces, which hold the handles rigid and strengthen the entire cultivator. Teeth can be furnished separately and used on any of the Columbia cultivators.

	Each
No. 7—Columbia Spring Tooth Cultivator. Five Spring Teeth. Weight, 53 pounds.....	$10.00

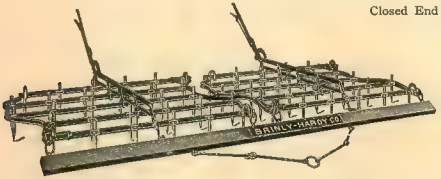
"Rufus" Cultivators and Harrows.

This tool is highly popular for shallow cultivation. Used for cotton, corn, vegetables and other crops. Illustration shows the cultivator when adjusted as a left-hand side harrow. Can also be quickly changed to right-hand side harrow, V-shaped cultivator, and straight cultivator. Has oil-tempered teeth and made of good material throughout.



	With Feeders.	Each
No. 1—"Rufus" Cultivator and Harrow. Seven Teeth.	Weight 56 pounds...	$5.00
No. 1— " " " " " "	With Fenders. Weight, 56 pounds...	6 00

Closed End Harrows.



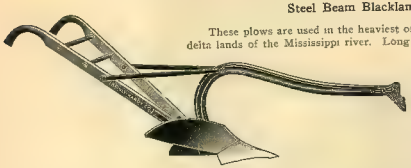
These harrows are strong and durable. Teeth are carried on Steel "U" Bars, to which they are attached by steel clips which hold them tight. The levers adjust the teeth to any desired angle, sloping backward or forward or standing vertically. They can be turned to a horizontal position so as to move the harrow from one place to another, the curved corner teeth acting as runners. The teeth are long and have the large heads to prevent their dropping out. Can be adjusted up or down or reversed to present new cutting edge. The patented steel tooth clip makes a very strong and efficient fastening and is absolutely unbreakable.

The outside Channel Bar Steel Frame protects the tooth bars. The ends of the "U" Bars cannot catch on obstructions nor gather trash.

	Each
Closed End Harrow. 50 Teeth, ¼ or ⅝-inch. Weight, 210 pounds	$18 00
" " " 60 " ¼ or ⅝ " " 220 "	20 00

The Brinly Steel Plows

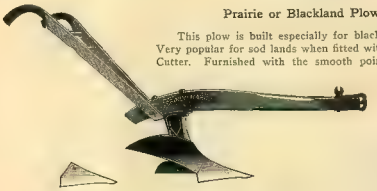
Steel Beam Blackland Plows.



These plows are used in the heaviest of black, sticky soils and in the delta lands of the Mississippi river. Long steel beam and long landside insure steady running. Built on solid frog and simple in construction, point having only one bolt hole. Moldboards are hardened soft center steel. Handles straight and interchangeable on all sizes.

										Each
Blackland.	Steel Beam.	7-inch Cut.	Weight, 86 pounds.	With Extra Point.....	$11 00
"	"	"	8 " "	"	88	"	"	"	"	.....	12 00
"	"	"	9 " "	"	91	"	"	"	"	.....	13.50

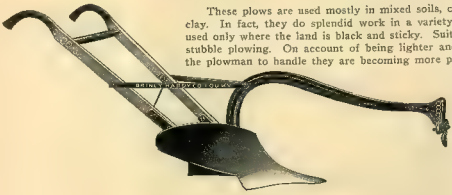
Prairie or Blackland Plows—One Horse.



This plow is built especially for black, sticky land and sticky clay. Very popular for sod lands when fitted with the famous Brinly Landside Cutter. Furnished with the smooth point as shown on plow or the Brinly Patent Duck-bill point. Specify which style point is wanted in ordering. Soft center steel moldboard. Handles on beam out of the way where they can not catch trash.

						Each
No. 1—Prairie or Blackland.	Wood Beam.	7-inch Cut.	Weight, 44 pounds.	With Extra Point....	$8.50

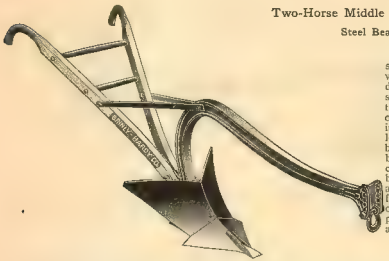
Mixed Land Plows.



These plows are used mostly in mixed soils, consisting of sand and clay. In fact, they do splendid work in a variety of soils and are not used only where the land is black and sticky. Suitable for either sod or stubble plowing. On account of being lighter and therefore easier for the plowman to handle they are becoming more popular all the time in sections where chilled plows have been used. Furnished with smooth shares, double shin moldboards of high temper, steel landside with replaceable heel, straight handles interchangeable on all sizes. Made right and left hand.

										Each
Mixed Land.	Steel Beam.	10-inch Cut.	Weight, 96 pounds.	With Extra Point...	$12 00
"	"	"	"	12 " "	"	108	"	"	"	"	..	13 75
"	"	"	"	14 " "	"	125	"	"	"	"	...	15.00

The Brinly Steel Plows



Two-Horse Middle Breaker Plows.

Steel Beam.

These plows are sold in every section of the South and give universal satisfaction. They do wonderful work in a great variety of soils, ranging from light lands to the heaviest of black muck. Built on solid, unbreakable malleable iron frog. No small pieces to work loose after long service. Handles bolted to handle piece on frog at back of beam where they can not catch trash that passes over moldboards. Points made double thick at end, giving the Brinly duck-bill feature and causing them to far outwear any other middlebreaker points manufactured. Moldboards are hardened steel

											Each
Two-Horse Middle Breaker.	Steel Beam.	10-inch Cut.	Weight,	91	pounds.	With	Extra	Point.			$13 00
" "	" "	12 " "	"	92	"	"	"	"	.		14 00
" "	" "	14 " "	"	101	"	"	"	"			15 00

Two-Horse Middle Breaker Plows.

Wood Beam.

These plows are the same as those shown above except with wood beam. They pull light, and although used for two mules in breaking land, they are extensively used with one mule in cultivating cotton and corn. The bevel standard slides off trash and the handles being up on the beam can not catch clods, weeds, etc. The plow bottoms of these middlebreakers will fit the Ruby, also Garnet and Coral beams, and persons possessing turning plows need only buy middlebreaker bottoms and thus have two plows.

Prices below are for the Ruby stock on the 10-inch plow and the Garnet or Coral stock with the 12 and 14-inch plows

											Each
Two-Horse Middle Breaker.	Wood Beam.	10-inch Cut.	Weight,	66	pounds.	With	Extra	Point...			$10 00
" "	" "	12 " "	"	69	"	"	"	"	...		11.50
" "	" "	14 " "	"	73	"	"	"	"	...		13.00

One-Horse Middle Breaker Plows.

Wood Beam.

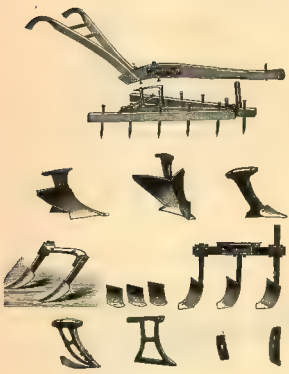
The splendid work that these plows do in light or heavy soils, in addition to their simplicity of construction and durable qualities, has made Brinly Middlebreakers the most popular sold in the Cotton States. These plows have the same plow stock as the Opal and Gem turning plows, and a person possessing a complete turning plow need only purchase the plow bottom of these middle breakers in order to have two plows. The 8-inch is used entirely with one horse, but the 9-inch is sometimes used with two horses

											Each
One-Horse Middle Breaker.	Wood Beam.	8-inch Cut.	Weight,	46	pounds.	With	Extra	Point....			$7 50
" "	" "	9 " "	"	47	"	"	"	"	.		8 00

The Brinly Plows

Combinations Applying to Brinly Universal Plows.

One and Two Horse.



Brinly "Universal" plows are those wood beam plows having the handles up on beam, making it extremely practical and economical to use different style plows and implements on the same stock These combinations are highly appreciated and extensively used by farmers. As will be seen from cut, a turning plow, middle breaker, subsoil plow, double shovel plow, sweep uprights for sweeps, scrapers, etc., a side-harrow and a harrow can all be used on the same plow stock. The lists of combinations given below do not embrace all of the combinations that apply to Brinly "Universal" plows but such as are greatly in demand.

The No. 10 Sweep Upright is for the two-hole Brinly Sweeps and Blades

The No. 18 Sweep Upright is for one-hole shapes of all kinds and also Brinly two-hole shapes.

The Sweep Seat (price 10c) is necessary to use on the No. 18 Upright for one-hole shapes.

The Scraper Seat (price 20c) is necessary to use on the No. 18 Upright for cotton scrapers.

One-Horse Combinations.

	List price.
Opal Turning Plow, complete	$ 5.00
8-inch Middle Breaker Bottom (or 9-inch, $5.75)	5.00
No. 0 Subsoil Bottom	2.75
No 18 or No. 10 Sweep Upright (shown above)	.75
"Rastus" Side-Harrow Attachment	3 85
Double Shovel Attachment (shown above)	3 25
No. 1 Harrow Attachment (shown above)	3 00
Total	$22 60

Gem Turning Plow, price $6.00, takes exactly same combinations as Opal shown above

Broncho Steel Turning Plow, complete	$ 3.00
Broncho Middle Breaker Bottom	4.00
Broncho Subsoil Bottom	2 50
"Rastus" Side-Harrow Attachment	3 85
No 20 Broncho Sweep Upright (same style as No 18) or Broncho Steel Sweep Upright	.75
Total	$14 10

Light Two-Horse Combination.

	List price.
Ruby Turning Plow, complete	$ 8 00
10-inch Middle Breaker Bottom	6 75
No 3 Subsoil Bottom	3 50
No. 18 or No. 10 Sweep Upright (shown above)	75
"Rastus" Side-Harrow Attachment	3.85
No. 1½ Harrow Attachment	5 00
Total	$27.85

Medium Two-Horse Combination.

Garnet Turning Plow, complete	$ 9 50
12-inch Middle Breaker Bottom (or 10-inch $6.75)	7 50
No. 3 Subsoil Bottom	3 50
No 18 Sweep Upright (shown above)	75
Total	$21 25

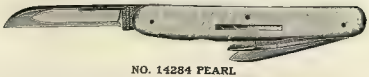
Regular Two-Horse Combination.

Coral Turning Plow, complete	$10 00
12-inch Middle Breaker Bottom (or 10-inch, $6 75)	7 50
No 3 Subsoil Bottom	3 50
No. 18 Sweep Upright (shown above)	75
Total	$21 75

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.



NO. 14284 PEARL

No. **14285** 4 Blades, Pearl Handles, 3¼ inches, Brass Lined, Polished Blades.....Per dozen $14.00
" **14284** 4 " " " 3⅜ " " " " " " " " 54.00

NO. 2222P PEARL

No.		Per dozen.
2222	2 Blades, Stag H'dl's, Thin Vest Pocket Knife 2¾ in., Brass Lined, Ger. Sil. Bolsters, Pol'd Blades	$15.00
2222P 2	" Pearl " " " " 2⅞ " " " " " " " "	30.00

NO. 15187 PEARL

No. **15184** 3 Blades, Genuine Stag H'dl's, 2¼ in., Brass Lined, Ger. Sil. Bolsters, Po.'d Blades..Per doz. $24.60
" **15187** 3 " Pearl " " 2⅜ " " " " " " " " " 30.00

NO. 17903 PEARL

No. **17902** 2 Blades, Genuine Stag H'dl's, 3 inches, Brass Lined, Ger. Sil. Bolsters, Pol'd Blades..Per doz. $28.00
" **17903** 2 " Pearl " " 3 " " " " " " " " " 36.00

NO. 2282 PEARL

No. **2282** 3 Blades, Pearl Handles, 3 inches, Brass Lined, German Silver Bolsters, Pol'd Blades..Per doz. $33.50

NO. 8762 PEARL

No. **15090** 4 Blades, Genuine Stag Handles, 3 in., Brass Lined, Ger. Silver Bolsters, Pol'd Blades..Per doz. $49.00
" **8762** 4 " Pearl " " 3 " " " " " " " " " 63.60

Half dozen in a Box.

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.

NO. 16148 EBONY

No.						Per dozen.
16148	2 Blades, Ebony Handles, 3⅜ inches, Brass Lined, German Silver Bolsters, Polished Blades					$13.80
16148S	2 " Stag " 3⅜ " " " " " " " " "					13.80

NO. 2154 STAG

No. 2152	2 Blades, Stag Handles, 2¾ inches, Brass Lined, Steel Hollow Bolsters											Per dozen	$10.50
" 2153	2 " " " 3 " " " " " " " " "											" "	11.00
" 2154	2 " " " 3¼ " " " " " " " " "											" "	12.00
" 2156	2 " " " 3½ " " " " " " " " "											" "	15.00

NO. 2240S STAG

No. 2240S 2 Blades, Stag Handles, 3⅛ inches, Brass Lined, Steel Hollow Bolsters ..... Per dozen $15.75

NO. 2294 STAG

No.						Per dozen.
2294	2 Blades, Stag Handles, 3¼ inches, Brass Lined, German Silver Bolsters, Polished Blades					$15.50

NO. 2241 STAG

No. 2241 2 Blades, Stag Handles, 3⅛ inches, Brass Lined, German Silver Bolsters .. .. Per dozen $15.75

NO. 2136G STAG

No.													Per dozen.
2136G	2 Blades, Stag Handles, 3 inches, Brass Lined, German Silver Bolsters												$12.60
2138	2 " Pearl " 3 " " " " " " " " Polished Blades												22.30
2139	2 " Ivory " 3 " " " " " " " " "												13.20

Half dozen in a Box.

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.

NO. 2092 PEARL

No. **2092** 2 Blades, Pearl Handles, 2⅛ inches, Brass Lined, Polished Blades ..... Per dozen $14.00
" **2135** 2 " Stag " 2⅛ " " " " " " " 10.00

NO. 2044 PEARL

No. **2017** 2 Blades, Grey Buffalo Handles, 3¼ inches, Brass Lined, Polished Blades .... Per dozen $12.00
" **2018** 2 " Ivory " 3¼ " " " " " " " 12.00
" **2060** 2 " Stag " 3¼ " " " " " " " 12.00
" **2044** 2 " Pearl " 3¼ " " " " " " " 23.00

NO. 12825 IVORY

No. **12825** 1 Blade Ivory Handle Corn Knives, 3¼ inches, Brass Lined, Polished Blades .... Per dozen $13 00

NO. 16584 IVORY

No. **16584** 2 Blade Ivory Handle Office Knives, 3¾ inches, Brass Lined ..... Per dozen $14.00

NO. 2180 STAG

No. **2180** 3 Blades, Stag Handles, 3¼ inches, Brass Lined, Steel Hollow Bolsters..... Per dozen $18.40

NO. 17020 STAG

No. **17020** 3 Blades, Stag Handles, 3⅝ inches, Iron Lined, Hollow Bolsters ..... Per dozen $21.30
" **6060** 3 " Genuine Stag " 3⅝ " " " " " " " 23.20

Half dozen in a Box.

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

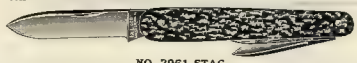
Cuts are Three-quarter Size.

NO. 17023 STAG

No.					Per dozen.
17023	3 Blades,	Stag Handles,	3¼ inches,	Brass Lined, German Silver Bolsters, Polished Blades...	$23.00

NO. 16711 PEARL

No.						Per dozen.
16753	3 Blades,	Genuine Stag Handles,	3	inches, Brass Lined, German Silver Bolsters, Polished Blades		$22.00
16711	3 "	Pearl "	3	" " " " " " " "		27.30
16472	3 "	Genuine Stag "	3¼	" " " " " " " "		22.00



NO. 2061 STAG

							Per dozen
No. 2015	3 Blades,	Ivory	Handles, 3¼	inches, Brass Lined, Polished Blades,	Nail Blade		$15.30
" 2020	3 "	Grey Buffalo	" 3¼	" " " " "	Pen	" "	15.30
" 2061	3 "	Stag	" 3¼	" " " " "	Nail	" "	15.30
" 2045	3 "	Pearl	" 3¼	" " " " "	Pen	" "	26.70

NO. 2144 STAG

No						Per dozen
2143	3 Blades, Stag	Handles, 3	inches, Brass Lined, German Silver Bolsters, Polished Blades			$20.50
2197	3 " Pearl	" 3	" " " " " " " "			29.60
2144	3 " Stag	" 3¼	" " " " " " " "			21.30
2198	3 " Pearl	" 3⅛	" " " " " " " "			34.20

NO. 14410 GENUINE STAG

No.						Per dozen.
14410	3 Blades,	Genuine Stag Handles,	3¼	inches, Brass Lined, German Silver Tips, Polished Blades		$28.00
14414	3 "	Pearl "	3⅛	" " " " " " " "		39.20

NO. 2161 STAG

													Per dozen	$20.60
No. 2158	4 Blades,	Stag	Handles, 3	inches,	Brass Lined,	Steel	Hollow	Bolsters						
" 2159	4 "	"	" 3¼	"	"	"	"	"	"	"			" "	20.50
" 2160	4 "	"	" 3¼	"	"	"	"	"	"	"			" "	20.50
" 2161	4 "	"	" 3⅜	"	"	"	"	"	"	"			" "	22.50
" 2163	4 "	"	" 4¼	"	"	"	"	"	"	"			" "	23.50

Half dozen in a Box.

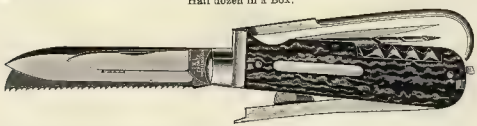
GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.

NO. 5657 PEARL

No.				Per dozen.
5656	6 Blades, Genuine Stag Handles,	2¾ inches,	Brass Lined, German Silver Tips, Polished Blades	$54.50
5657	6 " Pearl "	2¾ "	" " " " " " "	70.70

Half dozen in a Box.



NO. 7572 GENUINE STAG

No.				Per dozen.
7572	8 Piece, Genuine Stag Handles,	Sportsmen's Knife, 3¼ in.,	Iron Lined, Iron Bolsters, Pol'd Blades	$44.50
15596	5 " " " " "	3¼ " " " " " "		29.30
12764	5 " " " " "	2⅝ " " " " "	Pol'd Blades	34.00

No. 15596 and 12764 do not have Saw Blade.
Half dozen in a Box.

RUSSELL BARLOWS

NO. 60 BONE

							Per dozen
No. 60	1 Blade, Russell Barlows, Bone Handles,	Spear	Blades				$3.00
" 63	1 " " " " "	Sheep Foot	"				3.00
" 65	1 " " " " "	Clip	"				3.00

One dozen in a Box.

NO. 62 BONE

							Per dozen
No. 62	2 Blades, Russell Barlows, Bone Handles,	Spear	Blades				$5.00
" 64	2 " " " " "	Sheep Foot	"				5.00
" 66	2 " " " " "	Clip	"				5.00

One dozen in a Box.

NO. 6010 BONE

No. 6010 1 Blade, Russell Barlows, Bone Handles, Spear Blades.... Per dozen $7.00

Half dozen in a Box.

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.

NO. 2191 STAG

No. **2191**	4	Blades,	Stag	Handles,	Tobacco,	3¼	inches,	Brass	Lined,	Steel	Hollow	Bolsters...	Per doz.	$21.00
" **2193**	4	"	"	"	"	4	"	"	"	"	"	"	"	25.00

NO. 16573 PEARL

No.													Per dozen.
16578	4	Blades,	Genuine Stag	Handles,	3	inches,	Brass	Lined,	German	Silver	Bolsters,	Pol'd Blades.	$24.00
16580	4	"	Pearl	"	3	"	"	"	"	"	"	"	29.00
16425	4	"	Genuine Stag	"	3¼	"	"	"	"	"	"	"	23.00
16573	4	"	Pearl	"	3⅝	"	"	"	"	"	"	"	31.50

NO. 2145 STAG

No.													Per dozen.
2145	4	Blades,	Stag	Handles,	3	inches,	Brass	Lined,	German	Silver	Bolsters,	Polished Blades.	$22.00
2199	4	"	Pearl	"	3	"	"	"	"	"	"	"	31.00
2146	4	"	Stag	"	3¼	"	"	"	"	"	"	"	22.50
2216	4	"	Pearl	"	3⅝	"	"	"	"	"	"	"	36.00

NO. 16603 PEARL

No. **16603** 4 Blades, Pearl Handles, 3 inches, Brass Lined, Polished Blades ..... Per dozen $33.50

NO. 14392 GENUINE STAG

No.													Per dozen.
14368	4	Blades,	Genuine Stag	Handles,	2⅝	inches,	Brass	Lined,	German	Silver	Bolsters,	Pol'd Blades.	$28.00
14372	4	"	Pearl	"	2¾	"	"	"	"	"	"	"	35.00
14392	4	"	Genuine Stag	"	3	"	"	"	"	"	"	"	30.00
14396	4	"	Pearl	"	3	"	"	"	"	"	"	"	39.00
14270	4	"	Genuine Stag	"	3¼	"	"	"	"	"	"	"	30.00
14419	4	"	Pearl	"	3⅝	"	"	"	"	"	"	"	40.50

Half dozen in a Box.

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.

NO. 7001 GENUINE STAG

No. 6992	2	Blades,	Ebony	Handles,	3¼	inches,	Brass	Lined,	German	Silver	Bolsters.	Per doz. $10.00
" 6994	2	"	Genuine Stag	"	3½	"	"	"	"	"	"	" 10.50
" 7001	2	"	"	"	3⅝	"	Iron	"	Iron	"	"	" 9.50
" 7002	2	"	Ebony	"	3⅝	"	Brass	"	Silver	"	"	" 10.50
" 7005	2	"	Genuine Stag	"	3¾	"	"	"	"	"	"	" 11.00

NO. 2043 STAG

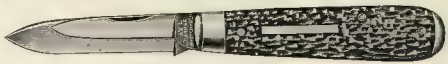
No. 2292 2 Blades, Stag Handles, 3¼ inches, Brass Lined German Silver Bolsters ----- Per dozen $14.00
" 2043 2 " " " " 3⅝ " " " " " " " " " 15.00

NO. 17002 STAG

No. 17001 2 Blades, Stag Handles, 3¼ inches, Brass Lined, German Silver Bolsters. ----- Per doz. $13.50
" 17002 2 " " " " 3⅝ " " " " " " " " " 13.50
" 17003 2 " " " 3¼ " " " " " and Caps " " " 13.50

NO. 17095 STAG

No. 17095 2 Blades, Stag Handles, 3¼ inches, Brass Lined, German Silver Bolsters and Caps. Per doz. $13.50



NO. 17011 STAG

No.												Per dozen.
17011	2	Blades,	Stag	Handles,	3½	inches,	Brass	Lined,	German	Silver	Bolsters and	Caps. $13.50
12044 G	2	"	Black Buffalo	"	3½	"	"	"	"	"	"	" 13.80

NO. 17009 STAG

No. 17009 2 Blades, Stag Handles, 3½ inches, Iron Lined, Hollow Bolsters, German Silver Caps. Per doz. $13.50

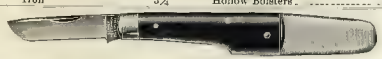
Half dozen in a Box.

GEORGE WOSTENHOLM & SON "I. X. L." POCKET KNIVES

Cuts are Three-quarter Size.

NO. 11543 COCOA

No. **11270** 1 Blade, Cocoa Handles, Pruning, 3⅛ inches, Iron Lined, Hollow Bolsters. ..Per dozen $9.30
" **11543** 1 " " " " 3⅝ " " " " " " " 10.60
" **14151** 1 " Iron " " 3¾ " Hollow Bolsters. " " 8.50



NO. 7691 BLACK HORN

No.		Per dozen.
7691	1 Blade, Black Horn Handles, Ivory Budding Tips, 4¼ inches, Brass Lined, German Silver Bolsters.	$12.80

NO. 17063 STAG

No. **17063** 1 Blade, Stag Lock Handles, 4 inches, Iron Lined, Hollow Bolsters ..Per dozen $14.00

NO. 8019 IRON

No. **8019** 2 Blades, Iron Handles, 3¼ inches, Hollow Bolsters, Spear Blades..Per dozen $9.60
" **7967** 2 " " " 3½ " " " Sheep Foot " " " 9.60
" **11169** 2 " " " 3¾ " " " Speving " " " 9.60

NO. 7033 GENUINE STAG

No. **7030** 2 Blades, Genuine Stag Handles, 3¾ inches, Iron Lined, Hollow Bolsters, Spear Blades..Per dozen $11.80
" **7033** 2 " " " " 3¾ " " " " " " " " 12.20
" **13937** 2 " " " " 3⅞ " " " " " " " " 13.00

NO. 6926 GENUINE STAG

No.		Per dozen.
6920	2 Blades, Genuine Stag Handles, 3¾ inches, Iron Lined, Hollow Bolsters, Sheep Foot Blades	$11.80
6926	2 " " " " 3½ " " " " " " " "	12.20
6974	2 " " " " 3⅝ " " " " " " " "	13.10

† Half dozen in a Box.

Although it is contrary to the policy of this company to make public its operating costs, yet the statement is made that the work which the trucks are performing could not be done by horses with the same satisfaction at any price, and that the permanent organization which is now well under way is gradually reducing the operating costs, and will still further reduce these costs as the system becomes older, more firmly established and the employees more accustomed to the work.

Large Department Store Favors Electrics.

The writer had an interesting conversation with the head of a well-known department store of New York City in regard to motor truck deliveries. Although this company's policy would not permit the publication in detail of costs or their truck experience, many interesting general facts were brought out. The electric truck was favored over

Inner Body Being Placed in Truck.

By this system the loaded inner body is rolled to the back of the truck after the other inner body has been removed, and then is slid into position and the truck goes on its route without unnecessary delay.

the gasoline for the following reasons: Drivers suitable for electric operation are are much more easy to obtain, and less likely to leave. For instance, upon the installation of several new machines, ads are placed in the daily papers for drivers. Large numbers apply, are interviewed and weeded down to a few. These must necessarily be young men to stand the climbing of stairs and in and out of the vehicles many times a day. These few men are sent to a bonding company as no men are accepted by this concern unless bonded. By the time the bonding company is through with the applicants there are very few left to take positions. Inside of a week several of these leave or are discharged on account of incapacity. By this time the few who are left are interviewed in regard to their mechanical ability, ability to keep up accounts correctly, and handle successfully the one, two or three boys under them as assistants. Their politeness to customers, non-drinking habits, etc., are also investigated. After this process is completed, it is found that there are very few suitable for handling a gasoline machine, and also that it is practically impossible to bring home the fact to these young men that $15.00 a week steady work throughout the year is better than $20 or $25 for a few months. The usual result is that the gasoline drivers leave in the spring when temporary touring car driving positions are open to them. These difficulties are not experienced when electrics are used, and in cases of emergency, when bad weather finds eight or ten men out of work, sick, even horse drivers can be shifted onto the job.

This company has a large fleet of electrics in service, and has had several years of experience. It finds the use of the Edison battery very economical in spite of high first cost, and have installed these in their later machines. The earlier machines, although capable of long hauls at first, were generally compelled to make shorter runs on each charge as batteries grew older. When a large number of machines were used this actually necessitated tagging and tabulating the age and work of the various batteries in order that a machine might not be sent on too long a haul and be caught without "juice" as the drivers have it. With the newer machines and batteries it is found that there is not this difference in mileage capacity per charge, and any machine is sure to go the route.

Solid Tires a Necessity.

Another feature pointed out as an advantage of the electric is the fact that more damage seems to be done to motors than to storage batteries due to jarring. In the company's estimation, this accounting for much of the trouble with gasoline machines. However, it may be here noted that although these might have been the conditions at one time, new spring suspensions and methods of engine mounting have entirely changed this state of affairs. Pneumatic tires, although advocated by some, the company finds are not as suitable as solid as they cannot be readily taken care of, and there is more chance for delay. With solid tires it is even possible to crawl home with the tire practically gone. This company is a firm believer in motor truck delivery, and is gradually increasing the number of vehicles employed.

Hewitt Trucks in Use in New York.

Colgate & Co., the well-known perfume and soap manufacturers, were among the first to make use of the motor trucks and were no exception to the general rule at the time, as they selected electrics to do their work. This choice was undoubtedly the result of good business judgment, as in those early days the gasoline machine was not nearly reliable, although in the few instances where a satisfactory one existed its up-keep cost was less than that of the electric. Storage batteries were and

conservative to figure that a 1-ton truck will displace 3 wagons, but at any rate the figures give some idea of what can be done. Cost of Horse and Wagon Equipment and

Five Years' Expense.

Cost of 34 horses at $150 each	$5,100
Cost of 15 wagons at $275 each	4,125
Cost of 18 sets harness at $50	900
Feed, shoeing, veterinary services, etc., 34 horses at $25 per month each	51,000
Wagon repairing and repainting at $25 per year	1,875
Harness repairs at $3 per week each	450
Fifteen drivers at $2.34 per day each	52,650
Fifteen helpers at $1 per day each	22,500
	$138,600

To the above should be added also, Liability and Fire Insurance.

Cost of Motor Truck Equipment and Five Years' Expense.

Five 1-ton capacity trucks	$11,500.00
Freight, Detroit to Portland, Ore.	1,080.00
Gasoline (averaging 60 miles per day) 8 gals. per day at 14 cents, $336 per year	8,400.00
Lubricating oil at $32 per year	800.00
Battery charges twice per month at 50 cents	300.00
Oils for lamps and incidentals, $20 per year	1,875.00
Tire replacements, $174.21 per year	3,484.20
Liability and Fire Insurance, $90 per year	2,250.00
Five drivers at $2.34 per day each	17,550.00
Five helpers at $1 per day each	7,500.00
Six per cent. interest for 5 years on $2,455 same being difference in original investment	736.50
	$55,975.70

This shows a balance in favor of the motor truck of $82,624.80 for 5 years or $16,524.88 a year. The price for the trucks was figured on a 60 miles per day basis for each vehicle, but when business did not require it this would be proportionately less, but the horses would eat just the same. It is also pointed out that by systematizing the service and using two of the machines for hauling all the cumbersome merchandise the helpers on the other three wagons might be dispensed with making an additional saving of about $900 a year.

An Experience of a Large Piano Company.

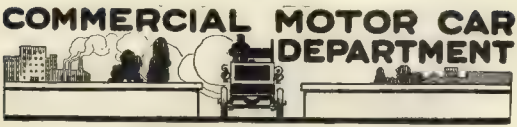
One of the most notable examples of the complete displacement of a horse delivery service by motor trucks is that of the Aeolian Company, of New York City, in the year 1897. The foreman of the delivery department was induced to try one of the early Knox air cooled machines, its maiden trip was made during the holiday season in a blinding snow storm, two pianos being delivered in upper Harlem, and the truck back at the starting point that same night, a trip which could not have been accomplished under the severe conditions by horses in several days. Four more of these machines were soon installed, and although, as was the case with all pioneers, difficulties and obstacles were frequently met, the company continued to add to its truck service, and dispose of its horses, until at the present time not a single horse remains of the forty horses formerly used, thirteen motor trucks of various types, including air cooled, water cooled and electric doing the work. The truth must be said that many times during this period the company was on the point of giving up, yet the fact remained that they did not, and why? A few minutes' talk is sufficient to convince any one that the service which is now being performed by these thirteen machines could not be duplicated by any number of horses. Frequent long trips, such as to Roslyn, L. I., or points in Jersey are made with ease, the trucks returning the same day. The customers are pleased at receiving their goods so promptly while with horses, such a trip would require a start at six o'clock in the morning, and the necessity of remaining over night with the attendant costs and return on the following day. The same trip is frequently made now by the motor trucks arriving on return at 12 o'clock noon, and after being again loaded make such a trip as to Westfield, N. J., returning the same night. Considerable saving is effected on these long hauls by the fact that the men do not have to be put up over night, nor horses stabled and fed as formerly.

An accurate record of each car is kept, each machine averaging about sixty miles per day. Drivers are not allowed to make any repairs on the road, but telephone the home office and a competent mechanic is immediately placed on the scene by the use of a high powered auto. The sample day's work is the delivery of three pianos, the wagon being accompanied by four piano men and a chauffeur. Such a trip as to Cranford, N. J., then to Orange and Montclair and return covering at least 80 miles is common. A record of having delivered eighty pianos in one day was made last winter at holiday season.

The drivers are paid about $20 each, and a competent foreman is in charge of the company's garage, which is the same place which was formerly used for the horses, but such a difference—everything is now concrete and cement, with suitable charging boards, wash stands, etc. Automatic charging apparatus is used throwing out as soon as the batteries are completely charged. Everywhere cleanliness, instead of the former dirt and confusion. The trucks take much less room than formerly occupied by the horses and wagons, so that there is no crowding. The machines are run into the repair shop for a complete overhauling in

The Present and the Past.

This group of trucks shows the present equipment of the Adams Express Company of New York, these machines having displaced a stable of forty horses. In the centre is shown the onehorse wagon with which the service started thirty years ago.



Use of Motor Trucks in New York

By E. S. Foljambe.

It is certain that nowhere in this country can be found such an aggregation of varied and various types of motor delivery wagons, trucks and lorries as in the Metropolis. Here street traffic is often congested almost beyond untangling, and the motor trucks are gradually relegating to the back streets, the horse drawn vehicles. Many enterprising firms have from ten to twelve years motor truck experience, and in several instances have dispensed entirely with the service of the horse. Of course, this is very often true with concerns using one or two trucks, but we refer to those employing large numbers of delivery vehicles.

In the early days of power delivery, the electric held undisputed sway, many four, five and six ton machines being employed. The pioneers soon found that truck service was not without its drawbacks, and many a shrewd business man was wont to admit that he had made a mistake in adopting them. However, these same men were of the kind whose lives are made up of overcoming difficulties, and it went sorely against the grain to acknowledge defeat. This resulted in a continuance, although in many cases at a decided loss in the use of the early types of motor truck. Gradually experience pointed the way to more economical service, and in the meantime the truck makers were advancing rapidly in the knowledge of more reliable constructions, and in truck requirements. Each year's output showed more conclusively that the motor truck was a factor in the business life of the metropolis which could not be overlooked by progressive business men. The older machines were remodeled, new bodies were fitted, and more competent, yet less expensive operators employed. The opposition of the horse drivers became less damaging, and the more progressive ones realized that better prospects awaited them by learning to handle this new form of delivery wagon. As the number of machines in service increased, the police and traffic authorities began to recognize that there was less congestion and soon invariably gave preference to the motor driven vehicle, knowing full well that it could quickly and accurately extricate itself from the most difficult tie-up, thereby immediately relieving the situation. The health authorities also saw in the advent of the power truck a more sanitary and cleanly city, and added their mite of help to the cause. Similarly the Society for the Prevention of Cruelty to Animals threw their weight into the balance, until at the present time, all influences are favoring the universal adoption of the power wagon.

It is, of course, realized that there are isolated cases where horses cannot be economically displaced, and as the introduction of the motor delivery wagon depends almost entirely upon the cost of operation, there will unquestionably remain in use horses after practically the entire delivery system of the metropolis has been transformed by the modern motor truck. To illustrate the point, candies are still made and used, although we have the many and varied systems of improved lighting, and horse cars are still in use, although the modern electric railway service is at its height.

Advantages of Motor Trucks.

For many years economy of operation was not strongly featured by the truck maker and salesman. The advertising value, quickness of services, increased satisfaction of customers, greater range of territory, etc., were the strong points. Now we are pleased to say economy of operation can be added safely to the list. Not in every case, because so much yet depends upon the inability of the user to properly handle the new form of transportation.

Marked advantages are shown by the truck at all seasons of the year. On glary, icy streets, the anti-skid shod truck moves as safely as over a park road, while the inefficient horse is seen on all sides in reclining attitudes with his feet pointing to all four points of the compass. In deep snow when the noise of traffic is practically stilled, the motor truck can be found bucking the drifts, while the horse drivers are kicking their heels in the stables unable to venture forth. In the heat of summer, over the glaring pavements, the motor vehicles continue on their way as placidly

It will be seen that the larger the truck, the cheaper the cost per ton miles. In exceptional cases, where the loading is all done at one point, and the unloading at another, the daily mileage is greatly increased, but the corresponding ton mileage cost is reduced. In a few cases, loads can be carried in both directions, resulting in cutting the ton mileage cost almost in half, however, these cases do apply to average business conditions.

One Truck Displaces All the Horses.

Too often the small merchant looks with envy upon the large department store with its rapid delivery system by motor truck, and feels that because a single truck would be ample for his requirements that it is impossible for him to use one because he cannot have a second machine in reserve. It is certainly true that wherever a complete machine can be kept in perfect condition as a relay, this is the best practice, nevertheless, this should not deter the small merchant from adopting the motor delivery service. That this can be done and done successfully from a financial standpoint, to say nothing of the advertising and business building abilities of motor delivery, has been clearly demonstrated in many instances, one of which may be cited.

This truck has passed its three-years' mark, still using the same batteries.

The Newcomb Mfg. Co., of New York, makers of picture frames and materials, three years ago this coming December, adopted an electric vehicle of Lansden make. This machine with the exception of about a month for overhauling has been in continuous service ever since, using the old Edison battery; and as far as can be determined, is now, when the working life of the whole vehicle is supposed to have been reached, giving as good mileage as at first. It was believed that after two years service the battery would have to be renewed, but this did not prove to be the case, and apparently the batteries are yet good for some years to come.

Firestone solid tires are used, the first set having lasted for two and a half years. The phenomenal record of this car is largely due to the careful treatment which it has received. The machine has been operated by a young man who has grown up with the establishment and is, as it were, personally interested in its performance. The city deliveries as far out as 80th street is the usual work, there being two regular deliveries, one at 10.30 and one at 3.30. In the busy season, however, the machine makes extra trips. Its total average mileage per day being about 40.

Cost Less Than Horse Service.

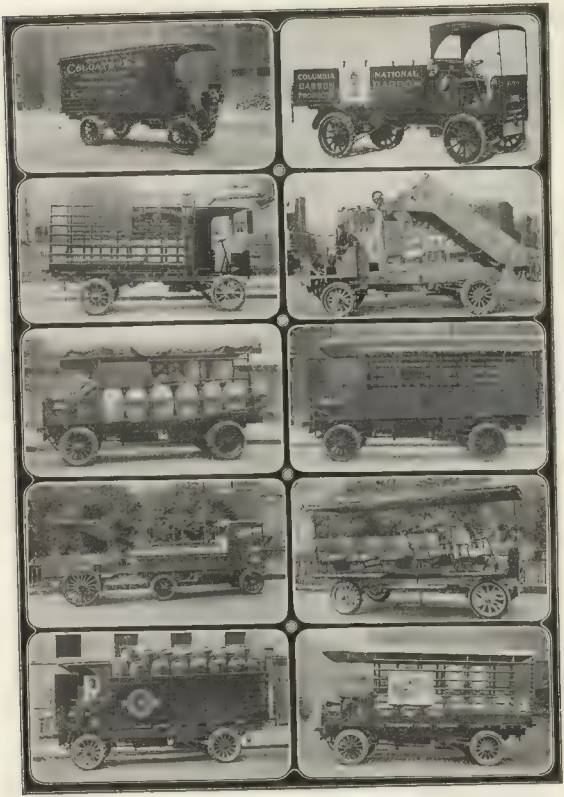
The cost of operation is known to be less than that of the single wagon and one horse truck which it displaced, to say nothing of the fact that deliveries are now made covering a larger range of territory. The present work, it is believed, would require at least three horses to do the work. A small amount of heavy trucking which has to be done at the same time the electric is doing its delivery is given out by the year, as it is not enough to warrant the purchase of a special machine.

During the eighteen months the total repairs and cost of operation for the electric was $137.53 and the outside trucking during that time amounted to $160, making a total of $297.62. This does not take into consideration the cost of charging. This was done by their own plant which was running at night, and it was found impracticable to obtain any figure as to its cost, for a time the cost consumption was measured and a comparison attempted, but as the consumption proved to be less than when the truck was not being charged, this attempt was given up. It may be said that the cost of charging, owing to the fact that the machinery has to be running anyway, was almost a negligible quantity. This makes the total cost of operation less than $350, allowing liberally for incidentals and also for depreciation during the same period the cost of the horses was $450.

This company believe the electric to be more suitable for its work than a gasoline machine as the latter could not come into the building on account of insurance rates, and the present machine is loaded in the building, in fact, the garage is just off the shipping room and the truck can be loaded while it is on charge, it being the custom to always place it on charge whenever it comes in. It is said that batteries seemed to stand considerable abuse, as they have often been so rapidly charged as to boil. The company reports no battery trouble at all, nor any trouble as yet with the motor.

Some Interesting Comparative Costs.

The following comparative although approximate figures are for 5 years, figuring 300 working days per year, on the basis of five 1-ton Grabowsky power wagons replacing 34 horses and 15 wagons, 15 drivers and 15 helpers, in the service of a department store. It may be questioned whether it is



Group of Hewitt Trucks.

This photograph shows various forms and sizes of Hewitt Trucks, made by the Metzger Motor Car Co., of New York, most of which are in daily service in New York City. Special attention is called to the 2 ton truck with a trailer which is now in use by the U. S. Government in the Philippines.

as on the coolest autumn day, while the horses with their tongues hanging out are dragging their feet slowly along, delaying the business of a big city.

How Wanamaker Handles the Truck Problem.

We have seen how it is possible for even the small merchant to operate a single vehicle with such economy and with such satisfaction as to be able to dispose entirely of his horse equipment; let us now take a look at a large installation and one in which original methods are employed. To begin with it may be said that the Wanamaker store believes so thoroughly in the use of motor trucks that they are perfecting an organization along Wanamaker lines with an idea of the future and permanency of the organization even more than its present. Old employees, as far as possible, are used for chauffeurs, as these men know their customers and are familiar with the general methods of the business. Both gasoline and electrics are used, the large gasoline machines being of Packard make, and used particularly for the longer hauls, but often short city runs are made when found advisable. Two or three machines have been in use for about five years, and in New York the company established last fall a permanent garage, and this summer the same method of putting the service on a permanent basis was adopted in Philadelphia. Eight machines are now in daily service averaging about 115 miles each, there being a double shift of drivers.

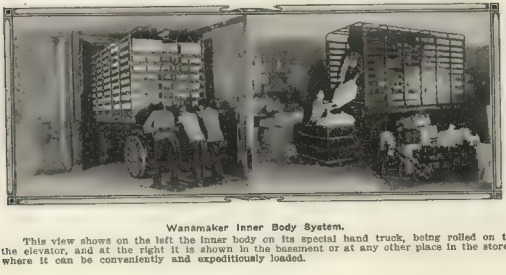
Time Saving Loading Methods.

A novel feature of the Wanamaker system is the use of a cage, or false inner body which can be loaded at the most convenient place in the store, either in the basement or on any floor. These inner bodies are fitted with small wheels which run on a little track, somewhat like those of a sliding door, in the body of the truck. inner bodies, when loaded, are moved by hand on a four wheel truck, which can be run onto the elevator, and is just the right height so that the body will slide into position in the motor truck.

This system is of advantage in many ways, not only is it a great time saver as the truck carrying one inner body can be delivering goods at the same time that its other inner body is being loaded, so that it is but a few minutes work to have the truck ready for another trip upon its arrival at the store; but it obviates the necessity for backing the gasoline machine into the building and thereby does not complicate the insurance.

The larger machines are used much during the daytime for carrying between the freight yards and the store, as well as for short delivery trips and their main long hauls to suburban districts. Many of these long hauls are made to substations, such as that of 175th street. This trip used to require 3 two-horse wagons, but is now easily accomplished by a single motor truck, which usually after doing a good days work leaves the store and unloads at the substation at night, so that this one machine is doing much more than the work of six horses. The local delivery from the substations is usually done by horses, the trucks being reserved for transferring the goods rapidly to these outlying points.

At the present time the New York store operates continuously seven machines, holding the eighth in perfect condition for instant use in case of trouble. The garage is now fitted with suitable machine tools and the cars are nightly inspected by competent mechanics. It is estimated that 25 wagons and at least 60 horses have been displaced, to say nothing of the fact that much better and more satisfactory service is now obtained and that the range of operation has been largely increased, goods being delivered in less time than ever before.



Wanamaker Inner Body System.

This view shows on the left the inner body on its special hand truck, being rolled on to the elevator, and at the right it is shown in the basement or at any other place in the store where it can be conveniently and expeditiously loaded.

still are an expensive item, but fortunately the modern battery is capable of much more continued service and the vehicles in which they are installed are more suitable to storage battery life. Colgate & Co. were also somewhat influenced by the fact that they could make use of their own plant for charging the vehicles at night, so that this item of expense was greatly reduced. Tires were the great bugbear of nearly all the early users, and this company for some time operated a heavy electric vehicle with large wagon wheels on the rear, fitted with solid iron tires. At the present time the Colgate Co. is operating 10 Hewitt trucks, one of the 3-ton machines being shown in the accompanying illustration. These machines average about 60 miles per day, mostly over cobblestone pavement.

The 5-ton brewery truck, also illustrated, carries a load of 50 half barrels, which means a load of 10,000 lbs., and covers about 40 to 50 miles a day. The Arbuckle Bros. are operating continuously the 5 ton Hewitt truck shown, with evidently satisfactory results.

The brewers have done much toward the introduction of the heavy unit motor truck, and like the others began with a complete equipment of the electric, most of the brewers did their own charging at night, some even going so far as to divide facilities for making complete repairs and even altering or rebuilding if necessary. Jacob Rupert has an equipment at the present time of 12 mammoth machines, 9 of which are gasoline, these cars are of Benz, Hewitt and Sampson manufacture. Gasoline installation, as indicated by its variety, savoring somewhat of a competitive test. This company practices a system that others might follow to advantage, that is, that a truck is never allowed to be loaded fully to its rated capacity. The 7 ton trucks are never given over 6 tons, etc., which probably has had much to do with the successful motor truck operation by this firm. More trucks are to be added to the equipment and the company firmly believes in the use of motor driven machines for brewers. The gasoline machines are used particularly for long hauls to suburban points, a single machine carrying when necessary, as many as 250 cases of bottled beer.

An interesting example of truck adaptation and the possibilities which open for doing by power what has for years been done by hand is that of the 7 ton dumping truck, which is also illustrated. This modern Hercules is used for sand, gravel, asphalt, etc. Not only is the machine motor driven, but by simply pushing a lever the power of the engine is used for dumping, it being possible to empty the entire load in 40 seconds without any special effort on the part of the driver. These vehicles have been found especially useful on short hauls, as the time of loading and unloading can be reduced to a minimum. The vehicle in question is now being operated by The Goodwin Sand and Gravel Co.

The Hewitt trucks also furnish an example of the usefulness of very large sized units for transporting coal. The 10 ton Hewitt truck herewith illustrated is in constant use by Burns Bros., of New York, who have recently purchased 10 machines of this type, having proved beyond doubt the efficiency of using such large sized trucks in their business.

	Cost per Day	No. tons Carried per load
1-horse wagon and driver	$4	1
2-horse wagon and driver	6	3
3-horse wagon and driver	8	5
2-ton motor truck	$10	3
3-ton motor truck	12	3
5-ton motor truck	14	5
7-ton motor truck	18	7
10-ton motor truck	27	10

Uncle Sam Uses a Trailer.

Road trains or trucks with trailers are practically an unknown quantity in this country, although largely used abroad where road conditions are more favorable. A 2 ton Hewitt truck with trailer, 4 of which with trailers were recently shipped to the Philippine Islands for the United States government, for use in road building, is illustrated in the page of Hewitt trucks. As these machines have to negotiate long hills, they are fitted with an extra water cooled transmission brake each, and each of the trailers is provided with an outside seat for the operator and with a hand brake.

Operated Two Years and a Half on Alcohol.

An interesting case which shows that gasoline is not absolutely essential, even at the present time for motor trucks, is that of a five ton Hewitt truck, which has been operated successfully for the past two and one-half years by James A. Webb & Sons, on alcohol as a fuel. The fuel, although found efficient, gave a decided advantage as the machine was allowed in a great many places, such as store-houses, docks, etc. where gasoline driven machines were not permitted. The following gives a simple method of comparing the cost of gasoline trucking with horses. These figures show the cost per ton-mile under average conditions, and are gathered and based upon the actual performance during five years of Hewitt trucks.

Daily Average No. Miles	No. Miles Loaded	No. Ton Miles	Cost per ton mile loaded one way only
22	11	11	36c
20	10	30	20c
18	9	45	18c
70	35	70	14c
60	30	90	13c
50	25	125	11c
44	22	154	10c
36	18	180	9¼c

routine order, and are not kept on the road until they begin to show signs of weakness. This takes place to each machine about every two months. Of course, when new machines are put in service, this does not apply until after the first year. One light weight Knox truck is always held in reserve.

This company believes that many truck makers are to blame in instructing purchasers that the machines will do 25 miles an hour loaded, and in claiming such large carrying capacities. Actual service shows that high speeds when loaded are very destructive, and the wise truck user never loads the machine even to its rated capacity.

Where Trucks Compete With the Railroad.

An unusual use of trucks is being made by L. Curth & Sons, 1810 Fulton street, Brooklyn, N. Y. This company have been using since last February two 5-ton Mack trucks for moving household furniture, making a specialty of long hauls and inter-city trips. The run from New York to Philadelphia, 105 miles, with household goods is often made in eleven hours. This company do not expect to displace all their horses, but are using trucks for these long special trips only. Such trips are now quite common, as it is possible to move from New York to Philadelphia in a single day, and have one's furniture in the new place of residence that same night. The start is made at six in the morning, and the destination is usually reached by six that night, everything from stoves to cut glass cabinets are packed on the wagons, and the record of breakage is extremely small as compared with the same service by railroads, with the many handlings which are necessary. For instance, the goods have to be carried wagon to the station, there unloaded on a platform, again loaded in the cars, unloaded on the platform at the destinations, again packed in the wagons and again unloaded at the house. In these numerous handlings damage often occurs, to say nothing of the fact that several days would ordinarily be required for such service. The charge of $100 per wagonload is usually made for this trip, and it is found that this compares very favorably with the expense by any other method, and as before stated, much time is saved.

Some Convincing Maintenance Figures

By Charles B. Hayward.

It has well been said that "figures don't lie, but liars often figure" and the commercial vehicle salesman who approached a merchant several years ago with an array of mathematics to bear out his statements as to the superiority of mechanical transportation over its time-honored predecessor, was quite apt to be put in the latter class. Doubtless some are still, but in the interim the commercial vehicle has proven itself to be so far in advance of horse transportation in every way that a little exaggeration arising out of enthusiasm as to its unlimited possibilities does not affect the outcome one way or the other. The trouble was that six or seven years ago, the salesman did not have a great many arguments at his command that were not based upon possibilities. He had to ask the prospective purchaser to invest in futures, and the merchant who had a substantial capital tied up in horses and wagons naturally was loth to part with an absolute certainty that cost him more to operate, in favor of one that promised to cost less.

Used Motor Trucks Since 1904.

Still there were some who were willing to try the experiment and it will doubtless come as a surprise to many to learn that their experience has been favorable right from the start. That of the Chicago Public Library affords an excellent instance. The loads are not heavy nor are the distances traveled long, but the service is steady and much of it is over pavements that are far from being good. The experiment was first tried in the latter part of 1904 with the installation of a two-cylinder Knox. That it has proven entirely satisfactory right from the start is evident from the fact that since that time, horses have been entirely done away with by the addition of five more Knox cars, so that the entire service has now been taken care of for some time by this fleet of six Knox gasoline machines.

When the shortcomings of the commercial car of 1904 are taken into consideration, it will be apparent that its latter-day successors have had no difficulty in proving their superiority over the horse by the showing which they have made on the right side of the ledger. In fact, some of these Knox cars have been in constant service so long that they have outlived the time for which their period of depreciation was figured by several years, and are still as far away from the scrap heap as ever.

Operating Cost Of Six Vehicles For One Year.

The total cost for operating this installation of six vehicles for the year ending April, 1909, was $10,846.62, and as will be evident from the following, this represents a very substantial percentage of saving over horse transportation, even when the latter is placed upon the most favorable basis possible in the comparison. The original investment in the six machines represented $18,000, so that the yearly interest charge on this at 6 per cent. was $1080. As all of

But truck makers, if their product is to be taken for evidence, have this yet to learn. I hear someone whisper, hard to drive big wheels! Why? Don't locomotives have 6 and 8 ft. drivers?

Steering.—A contractor's dump wagon can turn in a 20 ft. alley, but a $4000 auto truck several feet shorter requires double the width of road. Why can't all four wheels be steered?

They can and will be.

And Steering Knuckles.—Why put them several inches inside the plane of the wheels and induce a nice large bending moment and a lovely "kick" on the steering mechanism when either wheel strikes an obstruction singly? The steering knuckles can be put on the central plane of the wheel exactly under the load, and instead of "irreversible steering" we would have steering with no tendency to reverse.

And the Self Start.—Every time a gasoline motor is stopped by shutting off the gas more than enough power is dissipated in friction before the flywheel comes to rest to start the engine again. Why don't the makers make use of this fact? A compressed air start is easy, as is also one by pressure trapped from the exhaust. All this is well known.

And Chain Drives.—The buying public is educated to the point where they will not buy a chain driven pleasure car, and chains are even less desirable on trucks, because the loads are greater and the chains necessarily heavier and more expensive.

In addition the service is, if anything, harder on account of careless handling. Yet the truck makers expect the trained business man to buy chains and stand for their upkeep.

There never was and never can be a chain made which is the commercial equivalent of a good gear drive, because even if it could be made to last as long it would cost twice as much.

Friction Transmissions.—All the power of every automobile is transmitted to the road by friction. All our heavy freight trains are pulled by frictional contact of steel on steel. A transmission more "fool proof" cannot be made. The power is gradually applied practically without shock, and in the best types the gradations of speed are infinitesimal. Such devices can be designed to transmit any desired amount of power. Thousands are in successful use, and yet only a few truck makers fit them to their cars.

Springs.—The public is offered 4 point suspensions, and 3 point suspensions, and platform springs which rack the chassis on 6 in. in road variation from a plane surface when a substantially 2 point suspension which will allow any wheel to rise or fall a foot without straining the springs, the chassis or the drive, can be obtained.

And Lastly Tires.—Rubber tires must and will be eliminated from commercial cars. The tire makers have hypnotized both makers and buyers into the belief that solid rubber tires are the salvation of the cars.

Of course a stone half an inch high will sink into a rubber tire and not be felt, while with a steel tire it will either raise the wheel, be crushed or driven into the road. But how about a stone one inch high, or two or three or four inches?

The solid tire can hardly be said to reduce shocks. It does reduce noise and it does reduce vibration, but at what a price!

There is no question but that axles and transmission elements can be made to take the road shocks at truck speeds on steel tires; motors can be and are now built to stand this also, but if present motors will not—and many of them will not—mount the motor on a bag of air; give it a pneumatic tire of its own.

A friend of mine recently showed me an estimate for a suburban 'bus line over a 3 mile route on a perfect macadam road. His annual allowances for tires (solid) was about $7000. No other means of transportation exist except a couple of horse drawn stages which would cease business the day the new line started, and the travel is composed of workers from homes to mill and is of practically certain volume the year around, but his estimates showed no money to be made—indeed, a slight loss. I said, "Suppose you put steel tires on your 'buses and use that $7000 to pay dividends, would it be a better proposition?" He answered, "We could pay 20 per cent. dividends on this estimate." The difference between 20 per cent. dividends and a receivership! And thousands of steam trucks are in daily use in England, hauling heavy freight and paying dividends, on steel tires!

Such are some of the follies and inconsistencies of American truck builders which are retarding a great industry and which account for the "slowness of the few" business men who have not adopted trucks.

Why don't some truck makers build a truck like this?

1. Four wheel drive.
2. Four wheel braking.
3. Four wheel steering, if a large vehicle.
4. Power steering, if a very large vehicle.
5. Large wheels, 48 to 54 inches.
6. Wood or steel tires.
7. Friction or fluid transmission. An economical one.
8. Two cycle engine, preferably air cooled, with automatic self start and using low grade fuel.
9. Steering knuckles inside the wheel rims.
10. Shaft drives throughout.
11. Springs permitting large variations in position of the wheels without undue strain.
12. Engine and transmission separately removable and replaceable in less than an hour.
13. A dust proof lubricated service brake.

2-Cycle Department

HUGH DOLNAR

Questions will not be answered in this department unless the inquirer gives his name and address. The name and address will not be published if so requested. Put name and address on all drawings. When possible fold drawings and mail in envelope with the description.

THE "EVOLUTION" 2-CYCLE MOTOR

Hugh Dolnar.

This new 2-cycle motor, invention of Mr. Charles W. Foster, President and Treasurer of the Foster Motor Company, New Haven, Conn., U. S. A., is the outcome of over twenty years' experience in designing and building small gas engines both 4-cycle and 2-cycle. This wide practical knowledge of small gas engine theory, construction and operation finally culminating in the Evolution 2-cycle motor, having three pistons and three cylinders surrounding a common vertical axis, and all three operated by the single crank and connecting rod used to make pressure on the working piston turn the crank shaft, and are here shown and described in some detail for the first time in any publication.

Fig.1 gives two exterior views of this new Evolution 2-cycle motor, showing it to be the most simple in form, merely a cylindrical shell in two diameters with a dome head, placed upon a base which stands on the crank box. The left hand figure gives an oblique view with the crank box hand plate removed, and the carburetor, with a top oil cup not now used. The right hand figure shows a view of the fly wheel end, with the carburetor and the discarded top oil cup, and a hand-regulated pure air throttle at the right side, low down, which takes the place of the ordinary carburetor auxiliary air intake and makes the charge less and less rich in fuel as it is opened.

In Mr. Foster's opinion hand regulation of the auxiliary or regulating pure air intake valve is better than an automatic regulation, as the latter depending on spring pressure, may give good results at one speed and not at another. With hand regulation the charge richness and volume can instantly be varied to suit the working requirements of the moment.

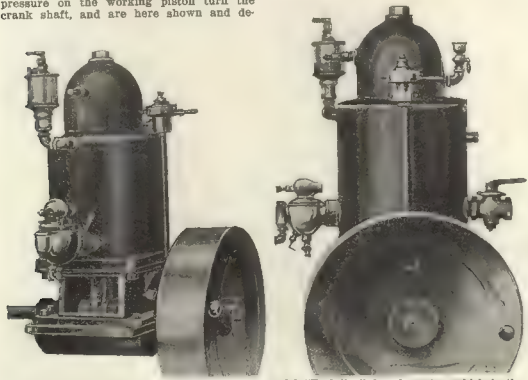


Fig. 1. The Foster Motor Company's new model "Evolution" 2-cycle motor, which is the outcome of twenty years' experience in 2-cycle motor building. Designed by Mr. Charles W. Foster, builder of over 200 2-cycle motors of various forms, now in highly successful use.

Lubrication.

Mr. Foster early became aware of the vital importance of abundant and continuous lubrication of all moving parts, and of the inherent faults of the crank box splash pool lubrication. This led to the placing of the high oil cup with a hand adjustable screw regulation of oil delivery from the high oil cup to the oil nozzle ON, Fig. 2, horizontally placed to deliver lubricating oil to the working cylinder charge as it passes through the intake port, IP, and to supply oil for cylinder and piston lubrication, the

lubricating oil so supplied gradually descending to the crank box splash pool. This lubrication method gave good results, and was long used with satisfaction, but all other oiling devices are now discarded in the Evolution motor in favor of the oiling method by mixing the lubricating oil with the gasoline in the fuel tank, which gives ideal simplicity while supplying a fixed quantity of lubricating oil for each revolution of the motor crank shaft, depending, of course, upon the relative proportions o lubricating oil and gasoline placed in the fuel tank.

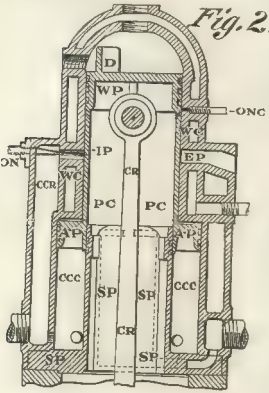


Fig. 2. Vertical cross section of the Foster 2-cycle "Evolution" motor, showing arrangement of the three cylinders, concentric, and their co-acting pistons, by which this "Evolution" 2-cycle obtains three effects of cardinal importance in 2-cycle gas engine operation, as follows: (a) Charge supply, independent of crank box pressure, (b) Working piston effect, usual form, and (c)) Internal, pure air, cooling effect. It will be observed that all these three cylinders and piston effects are obtained by motion of the working crank and connecting rods CR, without the use of separate valves.

Combined Water and Air Cooling.

The Evolution motor has ample exterior water jacketing in the usual form, which alone is quite sufficient to cool the working cylinder and annular piston to a safe working temperature. But the exterior of the annular working piston and its integral annular central cylinder is pure air cooled by making a cooling air cylinder of the cavity above the annular piston head, Figs. 2, 3 and 4 communicating freely with the open air through the interior of the crank box. The interior air cooling effect gained by this novel and admirably simple variation in 2-cycle motor construction, without valves or other added working parts, is to efficiently cool the entire interior of both the working piston and its integral charging piston and the interior of the crank box.

Full Volume Cylinder Charging.

In the annular charging cylinder the charge is lightly compressed by the annular working and charging piston in its working stroke descent, the maximum charge reservoir pressure being only about six or seven pounds, and always, when the motor is working full power, supplying a full volume working cylinder charge with constant maximum charge compression in the working cylinder.

Construction and Finishing.

The two diameter piston gives of necessity a long connecting rod; in the example here shown, a 14-in. C to C connecting rod for 4-in. stroke, or 3½ instead of the usual 2 piston strokes for the rod length. The long rod is a very great working advantage, vastly reducing friction losses and piston and cylinder wear.

The cylinder has three concentric diameters of bore, largest diameter outside, making easy finishing.

The Heavy Annular Piston.

The piston stroke is 4 inches, and the piston diameters are respectively 4 3-10 and 6½ inches, the finished piston weight being no less than 10 pounds.

Small trunk gas engine designers erroneously believe that the piston must be light to make smooth running. There may be some foundation for this belief in 4-cycle motor action, where there is no down stroke cushion, but in 2 diameter piston work, the charge compression gives ample piston cushion, and the Porter-Allen high speed steam engine theory amply confirmed by practice, showed that added weight of piston, cross head and rod, was conducive to smooth high speed running.

In the writer's own experience, a 2-cylinder, 2-cycle crank box pressure motor had a violent vibration. By accident, two new pistons for this motor were made four or five times as heavy as intended, through core omission due to faulty drawings, and to the great surprise of all concerned these heavy pistons ran with no vibration at all at any speed. The heavy Evolution piston is not only no blemish, but is a distinct and important advantage.

Dimensions, Weights and Price.

The following data and dimensions are as given by the makers:

The greatest pressure in the charge reservoir is 6½ pounds. There is, of necessity, a check valve between the carburetor and

14. Left side control of course.
15. Weight evenly distributed on the wheels.
16. All working parts completely inclosed.
17. A maximum set speed limit up or down hill.
18. Automatic lubrication throughout.

Can this truck be built? Of course it can. Every one of the items above is desirable, and every one of them, with the possible exception of the eleventh and last are in successful use on present trucks. But only one or two to a truck. Generally speaking, the "few remaining" business men are asked to buy a half dozen or more inadequate or worthless elements in order to secure one or two good ones.

PITTSBURG, PA. W. W. MacFARREN.

The writer of the above communication does not seem to be aware of the fact that there are several truck manufacturers who do not only make a "guarantee of performance," but for a set figure maintain during the entire season the trucks which they have sold, forfeiting a certain amount if the machines, for any reason whatsoever, are unable to give a predetermined mileage setter and more economical service in the varied places in which they are used than the horses formerly used, it certainly would not pay these manufacturers to continue such a business.

Granted that the four wheel drive on a gasoline truck is always desirable, the question arises, Is it worth the additional complication necessary to obtain it? The same is true of braking all four wheels and steering all four wheels. Is it not reasonable to suppose that if trucks were making a failure due to the lack of these features, that the makers would very soon incorporate four wheel drive, steering and braking in their designs? For these are features which can be had if it is found to be worth while. Several electric trucks are four wheel driven, largely for the reason that on such a vehicle this system of driving does not entail much, if any, added complication, but with the gasoline vehicle it is entirely different. It is granted that large wheels take the roads better than small ones, and if fitted with steel tires aside from additional weight of the large wheel, there would be no reason why they would not be used; but as long as rubber tires are employed, the cost immediately becomes an item which limits the size of the wheels. It seems very probable that for all light weight trucks the rubber tires will endure. Inventors have for years been endeavoring, but as yet utterly failed, to convince the world that there is a commercial substitute. To be sure, slow moving, heavy steam lorries have been and are now used in England on steel tires, but this is no reason why a 1000 pound delivery truck, which in its operation is more like a touring car, should be so equipped.

There are several suggestions here which are well worth consideration, but many of the statements made will undoubtedly be taken exception to by truck makers.—Ed.

A COMMUNICATION ON LUBRICATION

I see that the Acheson Company do not favor feeding oil with the fuel, believing it to be a wasteful manner (p. 140, Oct.) I feel sure this opinion is incorrect. Duryea Buggyauts are running right along with but one pint of oil to five gallons of fuel. And as a further experiment, I have been running one for more than a month with a pint of oil to 7½ gallons of gasoline; but in this case I have used a teaspoonful of graphite with the gasoline also. The lubrication seems to be perfect. The carbonization must be less and the smoke, dripping of oil, clogging of muffler and expense is, of course, less. When it is remembered that each gallon of fuel carries the rig from twenty to thirty miles it will be seen that 200 miles on a pint of lubricating oil is certainly not wasteful. This astonishing result is all the more to be admired when it is remembered that the engine is a two cycle and has the exhaust port on the under side so that every bit of excess oil can drain out of the exhaust port. It indicates that this method of feeding oil puts the oil where wanted when it is wanted, as I believe no other method can do. Other methods feed according to the time elapsed or the speed of the engine, but this method feeds oil as it feeds fuel. The more power and heat the more oil. It is simply perfect as well as perfectly simple and I wonder that anyone should criticise it.

READING, PA. CHAS. E. DURYEA.

Often on the road it is found that a loss of compression is taking place past the copper washer beneath the spark plug flange, and that a spare washer is not available. An excellent temporary substitute can be made by cutting a piece of 1-16-inch copper wire the right length and bending it round circularly so that the ends overlap. Then give each of the overlapping ends a tap with a hammer to reduce the thickness to about one-half, and so that they fit together fairly.

Should a bolt or nut fall into a pan or pot of grease or oil it can be readily fished out by holding a file, screwdriver or hardened piece of steel against the the magneto for a short time, and then using it as a magnet to attract the piece of metal. .

In adjusting cable-applied rear brakes, allow for loaded body, making a difference in the slackness of the cables. See that there are sufficient spare notches left on the quadrant when the brakes are hard on, for emergencies.

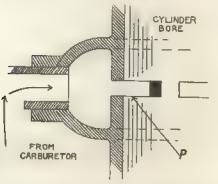
of heavy fuels. We seldom, if ever, get any of the light gasolines of a few years ago, when each particle of liquid was ready to go into vapor at the least chance. The heavier fuels are making the difficulty of carburation more difficult all the time.—C. E. D.

A GOOD SUGGESTION ON OBTAINING THIRD PORT HEIGHT

[703.] Do know of any simple method of ascertaining the dimensions for the inlet, transfer and exhaust ports for a three-port two-cycle engine 4½ inch bore by 4½ inch stroke?

SEATTLE, WASH. SUBSCRIBER.

The third port vertical dimension (vertical motor) must be a compromise, like most other mechanism dimensions. The greater the third port height and area, the less the negative work on the piston and the longer time of carburetor suction, with, of course, a lesser charge compression effective stroke length. I believe I would try ¼ inch third port height, open all the way round the cylinder with six bridges, ⅛ inch wide. This gives scant 60 degrees of crank angular advance for carburetor suction time, but gives ample crank-box intake port area with the third port extending all the way round the cylinder interrupted by 6 bridges, each ⅛ inch wide.



If you make your third port ring passage like sketch, it would be easy to remove metal at p, port wall, by a sinking mill-cut, and you could then note the motor performance with step-by-step third port vertical dimension increase. I do not think the third port can have too great a circumferential extent. It is the vertical dimension which is of importance.—H. D.

OPINION ON LUBRICATING 2-CYCLE ENGINES

[705.] Will you please answer by mail the following questions:

(1) About five or six years ago I noticed in The Cycle and Automobile Trade Journal a sketch of a water cooled, 2-cycle, 3-port gasoline engine. Can you tell just what number I will find it in? This was a sketch by you with dimensions so that one could work from it. I have been looking for it but have been unable to find it. I have nearly all of The Cycle and Automobile Trade Journals since 1901.

(2) Can this engine with one cylinder be well balanced at about 500 r. p. m.?

(3) Will splash oiling be good enough, or should there be an oiler on the cylinder?

(4) Do you think that a small engine of this type, say 1¾ x 2 inches can be made air cooled?

(5) At what r. p. m. do you think would be good for steady running with the constant load?

(6) What compression should be for both water and air cooled?

(7) Would you advise the use of a carburetor or mixing valve?

INDIANAPOLIS, IND. J. H. PEARSON.

(1) Do not remember any original motor sketch with dimensions printed in Journal, but we have published several engine sketches with dimensions, from our contributors.

(2) There is no more difficulty in balancing a 2-cycle single cylinder motor than in balancing a 4-cycle motor, same bore and stroke. Any single cylinder motor can be approximately balanced. The 2-cylinder 2-cycle is easiest of all to balance.

(3) Some 2-cycle motors are using Perry Okey's method of mixing the lubricating oil with the gasoline in the gasoline tank with satisfaction. Roberts uses mechanical oilers with his 2-cycle motors. Splash can be used, but is far from wholly satisfactory in any motor. The lubrication of a small gas engine should be wholly automatic, by gravity, without exterior oil piping, with a pump or other lift for elevating oil from the motor base to a point above the highest point of lubrication, continuous oil circulation. The oil in the gasoline tank ranks next, in my opinion, to direct application of oil to each lubrication point, circulating oil system.

(4) Yes, beyond question, but the designer must know what he wants to do and how to do it.

(5) A 2-inch stroke motor should make as many turns per minute as possible. Three thousand r. p. m. is fastest authentic record known to me, made by a Perry Okey 3-cylinder 2-cycle motor, 4 x 4 inch cylinders, jump spark, dynamo or dry cell current.

(6) Compression up to 95 lbs. of pure cold air, motor turned slowly by hand, giving from 125 to 140 lbs. running compression, has been successfully used. Initial pressure is about three times the maximum compression, but mean effective pressure does not increase directly in proportion to compression increase. About 75 lbs. is common compression practice.

(7) The carburetor is said to be superior to the mixing valve.—H. D.

BRIEF REVIEW OF RECENT EUROPEAN TWO-CYCLE DESIGNS

By Louis Ruthenburg.

So much lively interest is being displayed by American manufacturers, engineers and experimenters in two-cycle motor possibilities, designs and operation that a review of the work done by our transatlantic neighbors in these directions can hardly fail to be of some interest to the readers of this publication.

Many designers, both European and American, lose sight of the two-stroke engine's great advantage, simplicity and seek to obtain efficiency and flexibility by the addition of complications which place it on a par with engines of the four-stroke cycle in respect to multiplicity of parts. It is sometimes argued that large stationary engines of the two-stroke type and involving considerable complications are in successful use, but in reasoning thus the diametrically different operating conditions are not fully considered. It is a noteworthy fact that the comparatively few two-stroke motors which have obtained any considerable commercial success as car-driving elements have been of extremely simple design. It will be well therefore to first consider.

Crank-Case Compression Motors.

One of the simplest and neatest European two-cycle developments is found in the two cylinder, three-port engine employed in driving the three horse-power Scott motorcycle. This is said to be the result of several years' experimenting on the part of Mr. A. A. Scott, of the Scott Engineering Co., of Bradford, England, and certainly represents one of the most highly specialized simple three-port designs within the writer's experience. The two 2⅝ by 2½-in. cylinders are finned for air cooling up to the heads, which are covered by aluminum water jackets. The cylinders are bolted into the aluminum crank case, which extends almost to the lower level of the exhaust ports. The crank shaft is a built-up construction, carrying the flywheel and two sprockets between the cylinders and taking the thrust of the connecting rods on overhung crank pins. Notable in this design is the successful use of roller bearings on both crank shaft and crank pins, the crank case pressure being retained by means of spring loaded collars independent of the bearings. Crank box clearance is very small and the flat connecting rods work through slots between the cylinder and crank case, the builders claiming that the charge is practically excluded from the crank case and retained for precompression in the lower end of the cylinder. This construction permits the use of splash lubrication. The overhung crank construction makes the crank case very readily accessible from either end of the engine. The pistons are long and three snap rings above the piston center are found sufficient for all needs. It is difficult to bring a description of this Scott motor-bike design to a close. So many novel and ingenious features are embodied and so many records have been made that the machine is of more than passing interest.

But as this article relates to two-stroke motors rather than to motorcycles, we must turn from this interesting little design to a successful development of the Lucas type. This consists of two cylinders side by side, and communicating at their upper ends. The two pistons move together and through their connecting rods drive in opposite directions two crankshafts connected by gears. At the bottom of one piston's stroke is located the exhaust port, while the other piston, at the lower end of its travel, uncovers the transfer port. It will be seen that the wall between the two pistons acts as a deflector plate equal in length to the travel of the pistons. Inasmuch as the incoming charge must pass to the top of one cylinder and from there to the bottom of the other cylinder before there is any chance of its escape through the exhaust port, this motor should show economical results. From the description it will be observed that the mechanical balance is, theoretically, about perfect. As the engine is fitted with one flywheel to each crank shaft, it requires a good deal of lateral space in the chassis, but is practically as compact as a single cylinder engine in other dimensions.

Cross Head Motors.

The Cooper engine, in general design, is probably the nearest thing to steam engine practice ever placed in a gasoline car. Cross heads, stuffing boxes and piston valves are more often associated with the thought of steam engine design than with small internal combustion engine practice. In this design the space between piston and lower cylinder end is utilized for precompression, after the style of the American Eli stationary engine. Two piston valves are allotted to each cylinder, one for the purpose of controlling the inlet from the carburetor; the other for governing transfer of charge from the sub-piston space to the top of firing chamber. As each of these valves must have a long stroke, they are driven from a subsidiary crank shaft. The exhaust only is governed in the usual manner by a port in the cylinder wall, uncovered by the power piston in the bottom portion of its stroke. Ingenius as this engine undoubtedly is, its construction involves many parts, difficult castings, and it is very bulky for its power. It will also be noted that, aside from inertia effects, the charge is limited to the piston displacement volume.

Differential Piston Motors.

Representative of the class employing two diameter pistons is the English Duplex motor. In this design the cylinders work in pairs, the charge precompressed in the annular space of one cylinder being conducted to the transfer port of the adjoining cylinder. In this transfer passage are

Opinions and Suggestions

Under the above heading we will be pleased to publish letters from our readers expressing opinions, stating how they have overcome difficulties, or making useful suggestions. In this department will also be published longer communications or articles, of either a general or technical nature.

PRESENT FORM OF TRUCK NOT SATISFACTORY

Mr. Foljambe's editorial on "Trend of Truck Design for 1911" in the August "Journal" is able, but only touches some of the high spots.

To me it is amusing when he says "the slowness of a few in adopting motor driven vehicles and reaping the benefits to be derived," etc.

The truth is that the motor truck business is almost as much in its infancy as it was five years ago and that the great majority of business men having trucking to do, prefer to use horses for the very simple reason that they are more efficient commercially in the majority of cases.

There are, of course, many cases when the truck can show advantages due to greater speed or endurance or by reason of not being so much affected by weather conditions.

If the motor truck, as now built in this country, is such a sure winner why have not some of its makers sufficient faith in it to make some sort of a guarantee of performance per dollar expended?

Any hauling contractor will furnish teams and wagon to haul say so many tons of stone so many miles over a certain road per day at a total expense of so many dollars. Where is the motor truck manufacturer who will sell on such a guarantee?

I know of one department store using over eighty wagons, mostly one horse. These people have been ready for the last three years to spend say $50,000 on a motor wagon outfit, provided the maker will guarantee each truck to give equal service to one of their one horse wagons at equal cost.

I am a practicing mechanical engineer; have made a study of this subject for several years and am a firm believer in the eventual success of the motor truck. But not as it is at present built in the majority of cases.

The pleasure car is and always will be somewhat of a fad. Body design, luxurious appointments, styles in outline, finish and equipment will always have an influence on the purchaser. While fundamentally an engineering proposition there are many other factors involved in the design of a pleasure car. On the other hand the commercial vehicle is an engineering proposition first, last and all the time. The prime requirement is to move the greatest load the longest distance for the least money.

Other requirements are safety, reliability, durability, accessibility, simplicity, ease of control and the ability to be continuously operated by a (near) fool. All these requirements are possessed by the common horse and wagon. All these requirements may be incorporated in the perfect truck by engineering skill.

I presume that the above statements will be generally admitted. Now comes the question, "Why have these things not yet arrived? Why can't the eager business man, looking for the best way to move his goods buy this truck now?

Your readers will probably have their own answers. I will give mine.

In the first place there are numerous truck makers who have been attracted to the business by promise of large profits, who have neither in themselves, nor in their employ, the trained mechanical minds necessary for proper design; some of these people who dictate constructions have had no previous manufacturing experience of any kind.

Secondly there are some large manufacturers who having been commercially successful with their pleasure cars imagine they know all about trucks.

Also there are makers exploiting some single good feature instead of striving to perfect a truck of a harmonious and perfect design throughout.

Suppose we go into details a little. If there is any automobile where simplicity is a prime factor it is in the truck. The two cycle motor is notably simpler than the four cycle and can be made just as efficient. Yet only a few American makers apply them to trucks.

To any one familiar with street railway development it is a foregone conclusion that commercial trucks should have all four wheels driven, while it is not always necessary it is always desirable, and in many cases means the difference between success and failure. Yet only two or three truck makers furnish these features. Only one straight gasoline machine to my knowledge.

Four wheel braking comes naturally with four wheel driving, although it can be had without it. Yet only one or two makers furnish this. Does not every novice know the enormous increase in safety in coming down a slippery grade with four braking wheels? Don't all horse drivers need sometimes all their rear wheel brakes can hold and all the horses can hold back as well?

Why don't the truck makers put brakes on all the wheels?

Every village wagon maker knows that a 48 in. or 54 in. wheel will ride easier and require less power to propel than a 36 in. wheel, irrespective of the kind of tires used.

grasped in the middle is given a quarter turn.

You will observe that the effect of sliding the shaft will be to advance one block with relation to the other and this can be done at any time at the will of the operator. In action the inlet port can be opened at any time from the moment the pressure of burnt gases is off, to the time the exhaust is wholly closed, giving a complete control of their relations at all speeds.

DOBBS FERRY, N. Y. C. H. JUDSON.

The inflexibility you specify does not result from the 2-stroke cycle, but from crank-box cylinder supply, with resultant too small volume of cylinder charge. With adequate cylinder charging the 2-cycle motor is as flexible as the 4-cycle, all as is well known.

The 4-cycle motor with cam shaft, ordinary construction, has precisely the same fixed relations of intake and exhaust times as the crank-box pressure 2-cycle motor, in which the piston serves as a valve.

I have seen a very flexible 2-cycle motor working at 3000 r. p. m., and believe you are in error in your assumed conditions.

I do not believe you can make a revolving valve work durably to open and close a port, where exposed to the interior of an internal combustion motor cylinder. I have seen this tried more than once, and never with any degree of satisfaction. The only valve that will stay, so far now known to me, is of the straight lift and drop type; the rotary valves scratch and cut.

Again, with a bottom exhaust opened by descent of the piston, and standing open while the top valve is open, and the top port supplied with combustible mixture by a fan, how can the possibility of fuel loss through the exhaust port be avoided?

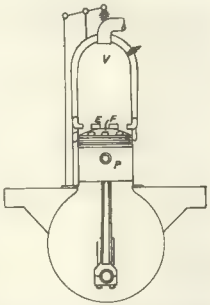
It seems to me that if the bottom exhaust is retained, opened and closed by piston descent and rise, then some sort of a charge measuring and transforming device must be introduced which will ensure a variable definite volume of combustible charge to be forced through the top port into the cylinder while the bottom exhaust is open. Such devices are well known and largely used.

2-CYCLE WITH FUEL INJECTION

[1083.] The writer is herewith enclosing sketch and description of something new in the two-cycle line.

Referring to sketch: V represents exhaust valve; N, fuel injector nozzle; E, a series of exhaust ports; F, a series of inlet ports. The action of the motor is as follows:

Piston P on the downward stroke uncovers exhaust ports E, allowing the hottest gases to escape through them. At this point the exhaust valve V opens simultaneously with the inlet ports F, thus allowing the charge of cold air that has been previously drawn in crank case to fill the space above the piston and to force out the charge that has been burned. Exhaust valve V remains open until the piston has returned



Palmer 2 cycle engine with pure air scavenging.

to a position on its upper stroke, where it has displaced the contents of the combustion chamber, thus affording perfect scavenging of the burning gases.

No fuel enters the cylinder until all ports are closed and the cylinder has entrapped a charge of fresh air.

CLEVELAND, O. ARTHUR E. PALMER.

Your use of a valve in the head through which the burned gases can be discharged is not new, but it is good. It permits using a smaller clearance space and this, with a given compression and stroke, means a longer expansion and great economy. The use of but partial charges and small clearance space lessens the power of the engine somewhat, but it is easy to build it slightly larger to get any desired power.

Fuel injection seems to be gaining favor. In aviation work it is almost a necessity because of the shifting positions in which the engine works and this being true it will doubtless be developed as it never has been heretofore. In this way aviation experience will help auto and other work just as the auto engine has paved the way for successful aviation engines. Personally I do not favor fuel injection. The carburetor has been brought to a high degree of perfection and the fuel takes time to vaporize after leaving the carburetor. This it gets in the pipes and in the crank case with resultant economy; but if pumped directly into the cylinder just before ignition I have no doubt but that little globules of fuel go through without being vaporized and burned. Keeping this in mind you will see that it may be more economic to admit the fuel to the crank case and run the risk of losing some out the exhaust port, than to use a pump and lose partly burned fuel out with the exhaust. These facts must particularly be kept in mind in these days

located two spring loaded poppet valves, one controlling the admission from the carburetor, the other opening to the air. As the carburetor valve is nearest the precompressing chamber, the indrawn carburetted charge is followed by a volume of pure air. The proportions are such as to cause the pure air charge to remain in the transfer passage until the piston controlled transfer port is uncovered, at which time the pure air is forced in ahead of the carburetted charge, scavenging the cylinder and preventing backfiring.

Separate Charging Cylinders.

To the reader accustomed to think of separate charging cylinders only in connection with large stationary two stroke engines, separate cylinder charging practice applied to a little 1¾ by 2-inch motor-bike engine would seem an oddity. A motor of this description forms part of the Wall autowheel, a power driven attachment for pedal operated bicycles which was featured at London's last Stanley Cycle Show. In this application the charging cylinder is directly opposed to the power cylinder and contains a piston which is really an extension of the power piston. This diminutive power plant, which could almost be carried in one's coat pocket, is said to develop 1¾ horsepower.

The best known European motor of this type is probably that used in the Dolphin chassis. This engine has charging cylinders set at an angle to the working cylinders. The charging pistons received their motion from a connecting rod attached to the main connecting rods at points just above the usual marine type big ends. The charge is drawn into the pump through an automatic valve and compressed on the return stroke. When the working cylinder pressure drops to a certain point after the usual piston controlled exhaust port has opened, the charge is transferred into the cylinder by way of another automatic valve. The combustion space is said to be so proportioned as to cause the gas to enter in the form of a cone, precluding any possibility of the fresh and burnt gas mixing. By the above described method of driving the pump, the average speed of the pump piston is made much less than that of the working piston. At the same time the pump piston is given a very rapid compressing stroke, practically completed while the exhaust port is open. This motor has been on the market for several years and has given some excellent results under test.

The Appleton motor is somewhat similar to the one just described in general arrangement. Charging pumps are driven from the main crank shaft, and, until the last few degrees of their downward strokes, draw a carburetted charge through an automatic valve, near the lower limit of pump stroke the transfer passages between charging and working cylinders are put into communication with the common crank case containing air at atmospheric pressure. This communication is effected by the power piston, which controls the transfer port, opening it to the working cylinder during the lower portion of its stroke and to the crank case as it approaches the upper limit of its stroke. This pure air cushion is forced into the working cylinder ahead of the carburetted charge, serving to scavenge and to prevent back firing.

The writer was rather startled to see a "Positive Explosion Turbine" advertised by an immense sign in one of the spaces of the recent aeronautical exhibition at Olympia. Closer investigation, however, showed, not a turbine in the generally accepted sense of the word, but a revolving cylinder two stroke motor of rather novel design. This Lamplough arrangement consists of two working and two charging cylinders spaced about a stationary shaft, but with the axes of all cylinders parallel to the aforesaid shaft. In each cylinder are two pistons arranged to move toward and away from another—a la Gobron-Brille'. By an arrangement involving connecting rods, rollers, yokes and angular discs, the explosive impulses are transmitted to the shaft and force the entire assembly of cylinders to revolve about it. The charge is drawn through the hollow shaft, its admission to the pump cylinders being controlled by means of oscillating sleeves surrounding and concentric with the pump cylinders proper. As the two pistons in each power cylinder move toward the outer limits of their strokes, one of them opens the exhaust ports, and the other the transfer port; this feature of the design reminding the engineer very strongly of Oechelhauser stationary engine design.

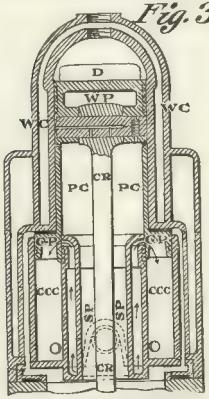
Blower Charged Motor.

Remarkably good results have been obtained in the aeronautical world by the N. E. C. Motor, which is scavenged and charged by a pair of Root type blowers. A double row of ports are placed on the charging side of the motor, the upper row admitting pure air only, and the lower admitting the gas charge immediately afterward. Distribution of air and gas is controlled by rotary valves. A two-cylinder engine of this type, 3 by 4¼ inches, is said to have developed 20 horsepower at 2000 R. P. M. This particular motor tipped the scales at 100 pounds.

It is hoped that the above brief outline will enable the reader to appreciate the vast amount of attention which European designers are giving the two stroke motor. Although it cannot be said that the two-cycle engine shows immediate promise of universally replacing its four-stroke cousin as a propulsive agent for motor cars, the fact that it is finding successful application in connection with motorcycles and aeroplanes as well as in automobiles and motor boats is, in the words of the Gallic designer, sufficient to "give one furiously to think."

the annular charging cylinder. The lubrication oil nozzle, now discarded, shown in these illustrations ON, Fig. 2, had 1-16 diameter central hole. The motor shown has 4 3-10 inches working piston diameter, and 6½ inches annular charging piston diameter, and has 4 inches piston stroke and piston weighs 10 pounds. The three pistons have each a set of piston rings, eccentric, 45 deg. angle cut. The bore of the

Fig. 3.



Vertical Lengthwise Section.

Fig. 3. "Evolution" 3-cycle motor three cylinders and pistons in section, with upper part of connecting rod, showing the working cylinder WC, working piston WP, deflector D, annular charging piston CP, charge compressing cylinder CCC, central cylinder SP, its moving cylinder bored in the interior of the working piston, and generally a vertical mid-plane section at right angles to that shown in Fig. 2.

working piston and diameter of the pure air cooling piston are respectively 3 9-10 inches and 6½ inches. The weight of the complete motor as here shown is 260 pounds, weight of fly wheel, 75 pounds.

The connecting rod length is 14 inches, diameter crank shaft wrists and bearings, 1½ inches; highest speed, unloaded, 2220 r. p. m.

The lubricating oil supply in the gasoline tank is 1 pint to 5 gallons of gasoline, and the greatest power is 9½ B. H. P., shown at 950 r. p. m. Attention is called to the extremely high maximum power for 4 3-10 diameter piston, 4-inches stroke, at 950 r. p. m. The selling price is $225 or $425 for a 3-cylinder model now completing which should show 28½ B. H. P.

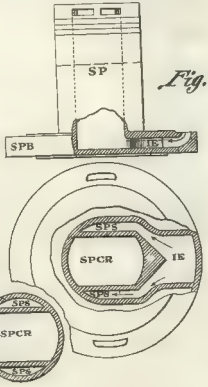
The intake port is 7-16 high, by full 4 inches circumferential extent, and the exhaust port ⅝ high, with the same circumferential extent. The packing rings are gray iron, ground on three sides.

Operation of the Evolution Motor.

This motor has six piston displacements, two for each of its three concentric cylinders and pistons which make up the single Evolution cylinder unit. These six piston displacements are used as follows: The working piston down stroke applies burning charge pressure to turn the crank shaft.

The working piston up stroke compresses the charge in the working cylinder, and simultaneously draws from the carburetor a charge of explosive mixture into the charging cylinder below the annular piston. The annular charging piston's down stroke in the working cylinder compresses this charge under its head, and simultaneously draws into the air chamber above the charging piston a volume of cooling air from the crank case. The up stroke of the charging piston, expels the cooling air so drawn in from the air chamber above the piston, and forces it back to the crank case.

Fig. 4.



Detail.

Fig. 4. Central cylinder SP in detail, giving side elevation, plan-and-cross-section, broken away to show the internal construction of SP, the central cylinder which consists of two integral members, the body SP, and the base SPB. SPB has a lengthwise, middle, vertical compartment SPCR, to permit the passage of the connecting rod CR, in all positions through SP, and two side compartments SPS, SPS, which are pure air passages, continuations of the intake passages IE, in the SP base.

The working cylinder descends on the central cylinder, during the down stroke, and again draws a volume of cooling air from the crank case which is in free communication with the atmosphere.

The charge transfers are all through "third" ports, no separate valves being used, and all six piston and cylinder effects are had by the up and down travel of the single integral 2- diameter piston, bored out inside the working piston body to form the central cylinder, all as previously shown and described, suitable, co-acting passages and ports being formed in the cylinders and piston walls, enabling the specified charging and pure cooling air transfers to be made. The illustrations show these various passages and ports very clearly and the operation of the motor is therefore described literally, with reference to the drawings.

The partial vacuums formed by the special actions are all light, and the combined friction is very low, as is proved by the high B. H. P. shown.

The charge compression in the working cylinder is about 70 pounds, slow compression stroke, heat neglected, making the actual compression probably about 140 pounds at 950 r. p. m.

Mr. Foster claims that the lubrication is perfect, and that the motor runs with but slight vibration and the construction renders this statement creditable.

2-CYCLE ENGINE CRITICISM

[701.] Enclosed find sketch and letter in regard to a 2-cycle engine I am building. The sketch shows the upper end or the piston and cylinder. There are six exhaust ports, 1 inch high, ¾ inches wide, ⅜ inch bridges between. There are five inlet ports, ¾ inches high, ¾ inches wide, ⅜ inch bridges between. The piston compresses in the cylinder to 1½ inches. The connecting rod is 11 inches from C to C. Base compression 10 lbs., cylinder compression chamber to 1½ inches, bore 6 inches, stroke 6 inches. At what speed should this engine be run to get best results and what power could I expect? Also what weight fly wheel would be necessary?

SYRACUSE, N. Y. H. D. R.

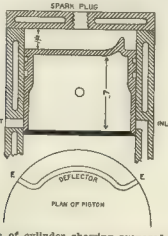
Your ports are not out of the way. Speed, strongest, would probably be between 1,200 and 1,500. Motor should show at least 80 b. h. p. at 1,300 r. p. m.

Connecting rods should be 15 inches C to C. Eleven inch rods which you specify would make a heavy side thrust and cause rapid piston and cylinder wear.

With the deflector as shown there will be loss of fuel. The deflector should be at least 1¾ inches high, coring up into the cylinder head to give deflector clearance, and the deflector ends, E E. Sketch of plan of piston herewith should fit the bore of the cylinder as near as may be without touching. The deflector will be more efficient if made two inches high, and the chances of self ignition will be less if the deflector has thin walls with ample inside opening to crank box.

If the cylinder head is hemispherical the incoming charge has a natural bend at the top, so that it will shoot up the intake side and descend on the exhaust side in as nearly an unbroken mars as may be.

Ten pounds crank box pressure will give a possibility of lubrication trouble and a 5 pound crank box pressure will move the cylinder charge rapidly enough for 1,500 r. p. m. Crank box pressure is negative work and should not exceed useful limits.—H. D.



Section of cylinder showing proposed piston and sketch giving suggestion as to the deflector form.

AN INCORRECT ASSUMPTION

[702.] The inflexibility of 2-cycle motors under varying speeds and loads, seems to be due to the unvarying relation of inlet and exhaust. The gases must take an appreciable time in passage and if speed greater than normal is expected they become choked. Even the time of the spark must be varied.

With this in view, I have devised a plan for varying the time relation of the two functions, and wish to submit it to you for an opinion as to its soundness and its having a possible commercial value.

Let us instance a 4-cycle engine.

The exhaust is at the bottom of the sweep as usual; the cylinder heads are pierced for inlets and are connected by a tube as a revolving valve having openings at 90 degrees for registry with the openings in the heads.

This tube carries a blower at the rear, bringing mixture from the carburetor. At the front end the crank-shaft and tube are connected by bevel gears driving the tube to time of the shaft. The horizontal blocks of the gears are connected by a square shaft that slides up and down through them and which is twisted as follows. In effect a square shaft is fixed at its ends and being

Secondly, why can't you consider this action as impulse motion, same as a pneumatic hammer for example, which by a series of rapid blows accomplishes the same thing as a steady, powerful push. Seems to me your contention is that it wouldn't push on account of the slip—and you are right—but how do you know it will not impulse like a turbine?

Referring again to the amount of oil used you will grant me there wouldn't be as much oil heated if less oil were used, and if heat proves loss, and you're right, it does—where does the heat go—where is the loss? JOS. E. BISSELL.

Your device certainly would heat the oil. How hot would depend on the radiation facilities, and using less oil would simply heat faster. Any and every bearing heats its film of oil, and unless the mass of metal can radiate the heat fast enough to prevent further rise the bearing gets too hot to run. Your device would simply be a friction heater. I can see no impulse action in it. It would be continuous with slight intermission if any. The stored energy is what counts. I consider it possible to make a speed reducer which will work with no reducing gearing and be analagous to the air hammer, but your device does not do it. It is simply a form of friction clutch. And no matter how many times you may turn one shaft, the other is not at any time driven appreciably more powerfully than the driver. If you are still unconvinced it is a small matter to make up a little model and try it. —C. E. D.

Perhaps the following may also be of help. Work=force times a distance. In any positive device like gearing, levers, pulleys, etc. (or friction surfaces for that matter during the time there is no slip) , if the distance is decreased as in any form of reducing gear, then the force which will be available for useful work will be increased in order that the total work remains the same. In your device, however, there is not this positive relation. The total work must remain the same, but just as soon as the clearance is provided you have other kinds of work being done, one in churning or transferring the oil from one side to the other (all of which is lost work), and useful work represented by the motion of the case due solely to the friction of the oil which is being driven around against its inside surface. As the slip increases as you endeavor to get a slower motion of the driven casing, the work done in the casing will decrease in proportion instead of increasing. Your device can undoubtedly be made to drive a car to just the same extent that any slipping of the clutch on a hill may make it possible to get up, simply because the engine is permitted to race and therefore keep up its power.—Ed.

If the springs squeak, introduce some flake graphite between the leaves. This prevents rusting and stops squeaks.

NOT ENOUGH BETTER TO PAY

[1094.] Will you kindly advise me through your Trade Journal if it would be practical for me to change a 4-cylinder, 20 horse power gasoline machine from 96-inch wheel base to 108 inches? The machine has 30-inch wheels and rides rather roughly on uneven roads, and will it take more horse power to drive this machine with 108-inch wheel base than with 96 inches?

WHITINSVILLE, MASS. SUBSCRIBER.

Nothing impractical about lengthening the wheel base. This does add something to the easy riding qualities, but not enough to pay for the cost of lengthening. Long wheel bases are for high speeds. I would think your present base amply long for speeds up to 25 or 30 m. p. h. The longer frame must be heavier to get the same strength. Your best way to get easier riding is to enlarge the wheels and tires. Also the springs. This gives comfort and does not make the rig too long to handle nicely in town. Springs and tires will cheaply do much to better the riding and increased wheel diameter will do more on rutty roads. The small wheel drops into holes that the large wheel does not notice. It has taken a dozen years for the public to learn that big wheels are desirable, but at last they have come to them. In time I expect to see them learn that bandiness is a desirable feature just as much as speed.—C. E. D.

PICRIC ACID IN GASOLINE

[1095.] I would like to have you state through the Cycle and Automobile Trade Journal how much picric acid and salammoniac one should add to, say, five gallons of gasoline to make a noticeable increase in power and state whether the two should be used together or whether picric acid is in itself capable of increasing the power.

ROSSVILLE, IND. O. A. B.

I do not remember ever hearing anything about salammoniac increasing the power. Its formula, NH4Cl, shows that it contains considerable hydrogen, but since this must have oxygen to support combustion I do not see any reason for supposing it to be any better than gasoline. Picric acid, C6H3(NO3)2O, contains the carbon hydrogen and oxygen for combination and derives its power from the sudden conversion of these from solid to gaseous form. I do not see that it would gain anything by combination with salammoniac. The acid dissolves in the gasoline. My recollection is that about 5 per cent. will dissolve. This would be about 1½ lbs. to 5 gals. The acid is explosive and should be handled carefully if at all. Then the increase of power may burst a cylinder or cut bearings.—C. E. D.

Rims should be treated with flake graphite as a preventive of rust. The application of a thin coat of quick drying shellac varnish, to which flake graphite has been added until the consistency is about like that of thick cream, has given good results.

BOKER TREE BRAND POCKET KNIVES

NO. 6518 STAG, 6518 WHITE BONE

No. **6518** 2 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades...Per dozen $8.00
" **6518** 2 " White Bone " " " " " " " " " " " " 8.00

NO. 7089 BLACK HORN, 7090 STAG

No. **7089** 2 Blades, Black Horn Handles, Brass Lined, German Silver Bolsters . . . . Per dozen $8.00
" **7090** 2 " Stag " " " " " " " " " " " " 8.00

NO. 7115 PEARL

No. **7115** 2 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades. ... Per dozen $9.00

NO. 6595 PEARL

No. **6595** 2 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades . Per dozen $9.00

NO. 6596 PEARL

No. **6596** 2 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades. ...Per dozen $9.00

Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 7072 STAG, 6681 PEARL

No. **7072** 2 Blades, Stag Handles, Brass Lined, German Silver Bolsters ..... Per dozen $8.00
" **6681** 2 " Pearl " " " " " " Pocket Blade Pol'd . " " 13.00

NO. 6514 GERMAN SILVER, 6824 GUN METAL

No. **6514** 2 Blades, German Silver Handles, Not Lined, Polished Blades ..... Per dozen $9.00
" **6824** 2 " Gun Metal " " " " " " ..... " " 8.00

NO. 5622 BUFFALO, 5622 STAG

No. **5622** 2 Blades, Buffalo Handles, Brass Lined, Polished Blades .. .. Per dozen $10.00
" **5622** 2 " Stag " " " " " " ..... " " 10.00

NO. 6544 GENUINE STAG

No. **6544** 2 Blades, Genuine Stag Handles, Steel Lined, Steel Bolsters, Polished Blades ..... Per dozen $12.00

NO. 6645 STAG

No. **6645** 3 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades ..... Per dozen $11.00
Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 6143 STAG, 5753 STAG

No. **6143** 3 Blades, Stag Handles, Brass Lined, Steel Bolsters ..... Per dozen $10.70
" **5753** 4 " " " " " " " " " " " " 11.00

NO. 6063 STAG, 6062 WHITE BONE

No. **6063** 3 Blades, Stag Handles, Brass Lined, German Silver Bolsters ..... Per dozen $11.00
" **6062** 3 " White Bone " " " " " " " " " " 11.00

NO. 6554 STAG

No. **6554** 4 Blades, Stag Handles, Brass Lined, German Silver Bolsters ..... Per dozen $12.50

NO. 5615 STAG, 6526 GENUINE STAG

No. **5615** 3 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades. Per doz. $13.75
" **6526** 3 " Gen. Stag " " " " " " " " " " " " 15.50

NO. 5639 STAG

No. **5639** 4 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades . Per dozen $15.00
Half dozen in a Box.

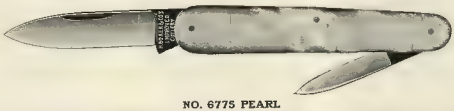
BOKER TREE BRAND POCKET KNIVES

NO. 5916 PEARL

No. 5916 2 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades..Per dozen $20.00

NO. 5454 PEARL

No. 5454 2 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades..Per dozen $20.00



NO. 6775 PEARL

No. 6775 2 Blades, Pearl Handles, Brass Lined, Pocket Blade Polished.....Per dozen $18.00

NO. 6557 PEARL

No. 6557 2 Blades, Pearl Handles, German Silver Lined, Polished Blades .....Per dozen $20.00

NO. 4676 PEARL, 3 and 4 Blades

No. 4676 3 **Blades**, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades. . Per dozen $24.00
" 4676 4 " " " " " " " " " " " " " " 25.00

Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 6189 CHECKED RUBBER **NO. 6113 STAG, 6114 PEARL** **NO. 6007 STAG** **NO. 5973 STAG**

No										Per dozen.
6189	4	Blades,	Checked Rubber	Handles,	Brass	Lined,	German Silver	Bolsters,	Polished Blades	$17.50
6113	4	"	Stag	"	"	"	"	"	"	19.00
6114	4	"	Pearl	"	"	"	"	"	"	30.00
6007	4	"	Stag	"	"	"	"	"	"	16.00
5973	4	"	"	"	"	"	Steel	"	"	19.00

Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 5974 STAG

NO. 5974

4 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades.

No. **5974** Per dozen $20.00

NO. 6066

Premium Stock Knife, 3 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades.

No. **6066** Per dozen $24.00

Half dozen in a Box.

NO. 6066 STAG

BOKER TREE BRAND POCKET KNIVES

NO. 5754 STAG, 5755 PEARL

No. 5754 4 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades ... Per dozen $16.50
" 5755 4 " Pearl " " " " " " " " " " " 24.00

NO. 6640 PEARL, 3 Blades, 6639 PEARL, 4 Blades

No. 6640 3 Blades, Pearl Handles, Brass Lined, German Silver Bolsters ... Per dozen $26.00
" 6639 4 " " " " " " " " " " " 27.00

NO. 5612 PEARL

No. 5612 4 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades. Per dozen $32.00

NO. 6292 PEARL

No. 6292 4 Blades, Pearl Handles, Brass Lined, German Silver Bolsters, Polished Blades ... Per dozen $29.00

Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 5613 STAG, 3 and 4 Blades

No. 5613 3 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Polished Blades ....Per dozen $16.50
" 5613 4 " " "

BOKER TREE BRAND POCKET KNIVES

NO. 6204 PEARL

No. **6204** 4 Blades, Pearl Handles, Brass Lined, Steel Bolsters. ..... Per dozen $22.50

NO. 6228 PEARL

No. **6228** 4 Blades, Pearl Handles, Brass Lined, German Silver Bolsters ..... Per dozen $23.00

NO. 6781 PEARL

No. **6781** 4 Blades, Pearl Handles, Brass Lined, German Silver Bolsters ..... Per dozen $22.00

NO. 6380 PEARL, 3 Blades, 6381 PEARL, 4 Blades

No. **6380** 3 Blades, Pearl Handles, Brass Lined, German Silver Bolsters..... Per dozen $19.50
" **6381** 4 " " " " " " " " " " " " 20.00

Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 6098 STAG, 6201 BUFFALO, 5752 WHITE BONE

No. **6098**½	2 Blades,	Stag	Handles,	Brass	Lined,	Steel	Bolsters	.....	.....	.....	Per dozen	$8.00
" **6201**½	"	Buffalo	"	"	"	"	"	.....	.....	.....	"	"	8.00
" **5752**-2	"	White Bone	"	"	"	"	"	.....	.....	.....	"	"	8.00

NO. 7069 STAG

No. **7069** 2 Blades, Stag Handles, Brass Lined, Steel Bolsters..... ..... Per dozen $8.00

NO. 7083 STAG

No. **7083** 2 Blades, Stag Handles, Brass Lined, German Silver Bolsters ..... Per dozen $8.00

NO. 7064 STAG

No. **7064** 2 Blades, Stag Handles, Brass Lined, German Silver Bolsters ..... Per dozen $8.00

NO. 7065 STAG

No. **7065** 2 Blades, Stag Handles, Brass Lined, German Silver Bolsters. ..... Per dozen $8.00
Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

NO. 5880 STAG NO. 5580 STAG NO. 5605 STAG, 6379 PEARL NO. 5607 STAG

No	5880	3	Blades,	Stag	Handles,	Brass	Lined,	Steel	Bolsters				Per dozen	$16.50
"	5580	2	"	"	"	"	"	German	Silver	Bolsters,	Polished	Blades	" "	17.00
"	5605	3	"	"	"	"	"	"	"	"	"	"	" "	17.00
"	6379	3	"	Pearl	"	"	"	"	"	"	"	"	" "	27.00
"	5607	3	"	Stag	"	"	"	"	"	"	"	"	" "	19.50

Half dozen in a Box.

BOKER TREE BRAND POCKET KNIVES

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5613 4 "	977	**6062**	973	**6379**	974	**6640**	980	**7069**	970
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5622 Stag	972	**6075**	969	**6400**	981	**6681**	972	**7089**	971
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5753	973	**6189**	976	**6518 White**	971	**6755**	969		
5754	980	**6201**	970	**6326**	973	**6775**	978		

NO. 6706 STAG, 6704 COCOA, 6705 EBONY, 6755 WHITE BONE

No. 6706	2 Blades, Stag	Handles, Brass Lined				Per dozen	$4.00
" **6704**	2 "	Cocoa	"	"	"	" "	4.00
" **6705**	2 "	Ebony	"	"	"	" "	4.00
" **6755**	2 "	White Bone	"	"	"	" "	4.00

NO. 6075 STAG

No. 6075 2 Blades, Stag Handles, Not Lined ..... Per dozen $4.00

NO. 6673 STAG

No. 6673 2 Blades, Stag Handles, Steel Lined, Steel Bolsters ..... Per dozen $8.00

Half dozen in a Box.

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226	901	485	964	2328	934	2650	908	3086	956	4037	961
228	916	497	959	2333	912	2653	908	3088	955	4042	959
232	906	587	967	2335	912	2656	933	3092	946	4043	960
233	906	604	932	2336	903	2658	933	3095	949	4044	960
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239	903	609	939	2348	901	2672	914	3117	943	4058	964
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246	913	616	932	2358	911	2732	923	3131	944	4200	961
248	904	618	912	2360	911	2733	923	3132	944	4356	962
251	931	620	912	2366	899	2741	902	3154	944	4359	962
253	931	630	911	2369	913	2744	902	3157	944	4771	963
254	909	631	932	2370	913	2749	915	3163	942	4772	963
261	935	632	932	2372	904	2755	902	3212	957	4773	963
263	935	633	932	2376	911	2758	902	3236	928	4841	960
264	901	634	933	2377	911	2759	915	3239	929	4856	959
265	901	638	935	2378	911	2771	937	3240	929	4901	966
268	938	656	913	2390	937	2772	937	3253	956	4915	961
271	939	657	913	2399	922	2773	937	3276	951	4917	961
275	909	658	913	2413	908	2779	916	3280	952	6002	938
277	936	661	933	2420	915	2786	908	3281	951	6003	936
284	939	662	938	2423	915	2787	918	3282	951	6015	927
285	933	1073	899	2467	920	2789	918	3311	944	6016	927
286	935	1075	899	2469	915	2790	908	3312	944	6024	908
290	936	1156	898	2478	924	2799	921	3315	958	6026	908
291	930	1665	899	2479	924	2816	905	3356	942	6027	927
292	930	2001	933	2481	924	2842	919	3359	942	6364	906
311	954	2015	905	2486	923	2846	930	3360	946	6420	932
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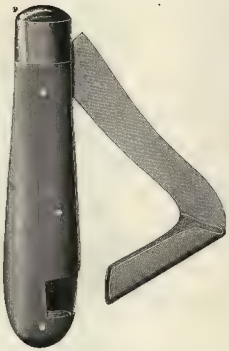
320	945	2067	920	2515	917	2871	941	3607	948	6469	915
324	946	2094	917	2516	917	2900	937	3608	949	6556	904
336	927	2102	933	2517	917	2902	938	3609	949	14366	899
341	953	2108	909	2522	919	2916	906	3621	944	30236	950
343	945	2115	934	2524	919	2938	922	3632	944	39156	945
346	953	2156	898	2525	916	2939	926	3637	955	41566	934
368	942	2171	910	2526	916	2962	905	3642	952	48366	934
371	942	2176	910	2528	916	2963	905	3705	956	58566	967

NO. 125
REDWOOD

NO. 1156 AND 2156
REDWOOD



NO. 135R
REDWOOD

NO. 164
EBONY

No.	125	1	Blade,	Redwood	Handles,	Steel	Lined,	Steel	Bolsters		Per dozen	$3.50
"	1156	1	"	"	"	"	"	"	"		" "	4.00
"	2156	2	"	"	"	"	"	"	"		" "	7.00
"	135R	1	"	"	"	"	"	"	"		" "	9.00
"	164	1	"	Ebony	"	"	"	"	"		" "	15.00

Half dozen in a Box.

NEW YORK KNIFE CO.'S POCKET KNIVES

NO. 142 REDWOOD
" 2366 STAG
" 14366 GENUINE STAG

NO. 1073 REDWOOD, 1075 STAG

NO. 1665 STAG

STEEL LINED, STEEL BOLSTERS

No.	142	1	Blade, Redwood Handles	Per dozen	$8.00
"	2366	2	" Stag Handles, Pruning and Pen Blades	" "	12.00
"	14366	1	" Genuine Stag Handles, Half Polished and Etched Blades	Per dozen	12.00
"	1073	1	" Redwood Handles	" "	12.00
"	1075	1	" Stag Handles	" "	14.00

BRASS LINED, GERMAN SILVER BOLSTERS

No.	1665	1	Blade, Polished, Stag Handles, Lock Back	Per dozen	$15.00

NO. 189 REDWOOD

NO. 187 STAG
LOCKED BACK

NO. 225
REDWOOD

No. **189**	1	Blade,	Redwood	Handles,	Steel Lined,	Steel Bolsters	Per dozen $13.00
" **187**	1	"	Stag	"	Brass "	German Silver Bolsters, Polished Blade	" " 24.00
" **225**	2	"	Redwood	"	Steel "	Steel Bolsters	" " 4.00

Half dozen in a Box.

NEW YORK KNIFE CO.'S POCKET KNIVES

NO. 209 REDWOOD CLIP BLADE — **NO. 265 STAG SHEEP FOOT BLADE** — **NO. 2506 BONE BARLOW** — **NO. 2348 EBONY SPEAR BLADE**

No.										
	209	2 Blades,	Redwood	Handles,	Steel	Lined,	Steel	Bolsters,	Clip Blade	Per doz. $4.00
"	226	2 "	"	"	"	"	"	"	as No. 209, but Spear Blade	" " 4.00
"	264	2 "	"	"	"	"	"	"	" " 209, " Sheep Foot Blade	" " 4.00
"	265	2 "	Stag	"	"	"	"	"	Sheep Foot Blade	" " 4.50
"	210	2 "	"	"	"	"	"	"	as No. 265, but Clip Blade	" " 4.50
"	206	2 "	"	"	"	"	"	"	" " 265, " Spear "	" " 4.50
"	2506	2 "	Bone	"	"	"	"	"	Spear Blade	" " 4.50
"	2348	2 "	Ebony	"	Brass	"	German Silver	Bolsters,	Spear Blade	" " 7.00

Half dozen in a Box, except No. 2506, one dozen.

NO 2735 REDWOOD
" 2738 STAG

NO 2741 REDWOOD
" 2744 STAG

NO. 2255 STAG

NO. 204 EBONY
" 205 WHITE BONE

No.	2755	2	Blades,	Redwood	Handles,	Steel	Lined,	Steel	Bolsters	Per dozen	$7.00
"	2758	2	"	Stag	"	"	"	"	"	"	7.50
"	2741	2	"	Redwood	"	"	"	"	"	"	6.50
"	2744	2	"	Stag	"	"	"	"	"	"	7.00
"	2255	2	"	"	"	"	"	"	"	"	7.00
"	204	2	"	Ebony	"	Brass	"	German Silver	Bolsters	"	7.50
"	205	2	"	White Bone	"	"	"	"	"	"	8.00

Half dozen in a Box

NEW YORK KNIFE CO.'S POCKET KNIVES

NO. 211 COCOA, 213 STAG | NO. 2336 COCOA, 2338 WHITE BONE | NO. 241 EBONY | NO. 239 EBONY

No.	211	2	Blades,	Cocoa	Handles,	Steel	Lined,	Steel	Bolsters	Per doz. $7.50
"	213	2	"	Stag	"	"	"	"	"	" " 8.00
"	2336	2	"	Cocoa	"	Brass	"	German Silver	Bolsters	" " 7.50
"	2338	2	"	White Bone	"	"	"	"	"	" " 8.00
"	241	2	"	Ebony	"	"	"	"	"	Pocket Blade Pol'd. " " 8.00
"	239	2	"	"	"	"	"	"	"	" " 8.00

Half dozen in a Box.

NO. 237 STAG, 2034 COCOA | NO. 6556 EBONY | NO. 2372 COCOA | NO. 248 EBONY

No.	**237**	2	Blades,	Stag	Handles,	Brass	Lined,	German	Silver	Bolsters	Per dozen $8.00
"	**2034**	2	"	Cocoa	"	"	"	"	"	"	" " 8.00
"	**6556**	2	"	Ebony	"	"	"	"	"	"	Pocket Blade Polished " " 8.00
"	**2372**	2	"	Cocoa	"	"	"	"	"	"	" " 8.00
"	**248**	2	"	Ebony	"	"	"	"	"	"	" " 8.00

Half dozen in a Box.

NEW YORK KNIFE CO.'S POCKET KNIVES

NO. 2015 STAG

NO. 2816 STAG

NO. 2663 STAG

NO. 2962 EBONY
2963 STAG

No.	**2015**	2	Blades,	Stag	Handles,	Steel	Lined,	Steel	Bolsters	Per dozen	$8.00
"	**2816**	2	"	"	"	"	"	"	"	" "	8.00
"	**2663**	2	"	"	"	Brass	"	"	"	" "	8.00
"	**2962**	2	"	Ebony	"	"	"	German Silver Bolsters, Pocket Blade Polished		" "	8.00
"	**2963**	2	"	Stag	"	"	"	"	"	" "	8.00

Half dozen in a Box.

NO. 2916 REDWOOD

NO. 232 COCOA, 233 EBONY NO. 6364 STAG

No. **2916** 2 Blades, Redwood Handles, Steel Lined, Steel Bolsters Per doz. $9.00
" **232** 2 " Cocoa " Brass " German Silver Bolsters, Pocket Blade Polished Per doz. 8.00
" **233** 2 Blades, Ebony Handles, Brass Lined, German Silver Bolsters, Pocket Blade Polished Per doz. 8.00
" **6364** 2 Blades, Stag Handles, Brass Lined, German Silver Bolsters, Pocket Blade Polished. Per doz. 8.00

Half dozen in a Box.

NEW YORK KNIFE CO.'S POCKET KNIVES

NO. 2285 EBONY

NO. 2493 COCOA

NO. 2572 COCOA, 2573 EBONY, 2574 STAG

No. **2295**	2	Blades,	Ebony	Handles,	Brass	Lined,	German	Silver	Bolsters,	Pocket	Blade	Polished.	Per doz. $8.00
" **2493**	2	"	Cocoa	"	"	"	"	"	"	"	"	"	" 8.00
" **2572**	2	"	"	"	"	"	"	"	"	"	"	"	" 8.00
" **2573**	2	"	Ebony	"	"	"	"	"	"	"	"	"	" 8.00
" **2574**	2	"	Stag	"	"	"	"	"	"	"	"	"	" 8.00

Half dozen in a Box.

NO. 2623 STAG, 2630 REDWOOD NO. 2786 EBONY NO. 2413 REDWOOD NO. 2790 REDWOOD
" 6026 " 6024 "

BRASS LINED, GERMAN SILVER BOLSTERS

No.	2653	2	Blades,	Stag	Handles,	Pocket	Blade	Polished				Per dozen	$8.00
"	2650	2	"	Redwood	"	"	"	"				"	8.00
"	6026	2	"	Stag	"	"	"	"	With Chain			"	8.00
"	6024	2	"	Redwood	"	"	"	"	"	"		"	8.00
"	2786	2	"	Ebony	"	"	"					"	9.00
"	2413	2	"	Redwood	"							"	9.00
"	2790	2	"	"	"							"	10.00

For additional Chain Knives, see page 910. Half dozen in a Box.

Wm. A. Rogers.

CELEBRATED SILVER PLATED FLATWARE

1881 ROGERS

Made only in A1 Extra Plate quality excepting Shell Pattern.

Wm. A. Rogers is one of the oldest established makers The quality of their product is beyond question. The goods illustrated on this page are the genuine

1881 ROGERS A1 BRAND

extra heavily plated on 18 per cent nickel silver; hand burnished and quality guaranteed The genuine Wm. A. Rogers goods are put up in boxes and are accompanied by a written guarantee from the manufacturer

PRICES PER DOZEN

CARLTON PATTERN

Made in A1 only.

Tea Spoons

No.	Per Doz
1617 A1 Plate	$3.00

Dessert Spoons

1618 A1 Plate	$5.35

Table Spoons

1619 A1 Plate	$6.00

Medium Forks

1620 A1 Plate	$6.00

Dessert Forks

1621 A1 Plate	$5.35

Butter Knives

1622 A1 Plate	$6.00

Sugar Shells

1623 A1 Plate	$5.35
1624 A1 Gilt "	9.35

[illegible] PATTERN

Made in A1 only.

Tea Spoons

No.	Per Doz
1625 A1 Plate	$3.00

Dessert Spoons

1626 A1 Plate	$5.35

Table Spoons

1627 A1 Plate	$6.00

Medium Forks

1628 A1 Plate	$6.00

Dessert Forks

1629 A1 Plate	$5.35

Butter Knives

1630 A1 Plate	$6.00

Sugar Shells

1631 A1 Plate	$5.35
1632 A1 Gilt "	9.35

LA VIGNE PATTERN

French Gray
Made in A1 only

Tea Spoons

No.	Per Doz
1633 A1 Plate	$3.00

Dessert Spoons

1634 A1 Plate	$5.35

Table Spoons

1635 A1 Plate	$6.00

Medium Forks

1636 A1 Plate	$6.00

Dessert Forks

1637 A1 Plate	$5.35

Butter Knives

1638 A1 Plate	$6.00

Sugar Shells

1639 A1 Plate	$5.35

LINDEN PATTERN

Made in A1 only.

Tea Spoons

No.	Per Doz
1640 A1 Plate	$3.00

Dessert Spoons

1641 A1 Plate	$5.35

Table Spoons

1642 A1 Plate	$6.00

[illegible]

1643 A1 Plate	$6.00

Dessert Forks

1644 A1 Plate	$5.35

Butter Knives

1645 A1 Plate	$6.00

Sugar Shells

1646 A1 Plate	$5.35
1647 A1 Gilt "	9.35

SHELL PATTERN

A1 and Triple only

Tea Spoons

No.	Per Doz
1648 A1 Plate	$3.00
1649 Triple "	5.35

Dessert Spoons

1650 A1 Plate	$5.35
1651 Triple "	8.90

Table Spoons

1652 A1 Plate	$ 6.00
1653 Triple "	10.70

Dessert Forks

1654 A1 Plate	$5.35
1655 Triple "	8.90

Medium Forks

1656 A1 Plate	$ 6.00
1657 Triple "	10.70

Twist Butters

1658 A1 Plate	$6.00

Sugar Shells

1659 A1 Plate	$5.35

Windsor Pattern furnished at same price.

TIPPED PATTERN

Tea Spoons

No.	Per Doz
1660 A1 Plate	$3.00

Dessert Spoons

1661 A1 Plate	$ 5.35

Table Spoons

1662 A1 Plate	$6.00

Dessert Forks

1663 A1 Plate	$5.35

Medium Forks

1664 A1 Plate	$6.00

Butter Knives

1665 A1 Plate	$6.00

Sugar Shells

1666 A1 Plate	$5.35

Wm. A. Rogers.

Celebrated SILVER PLATED FLATWARE. Wm. A. Rogers is one of the oldest established makers. The quality of their product is beyond question.

PRICES PER DOZEN

The goods illustrated on this page are the genuine Wm. A. Rogers brand, extra heavily plated on 21 per cent nickel silver, hand burnished and quality guaranteed. The genuine Wm. A. Rogers goods are put up in boxes like cut, and are accompanied by a written guarantee from the manufacturer.

ANNOUNCEMENT

The Wm. A Rogers, have discontinued the manufacture of X, XX, XXX plate in **Horse-Shoe Brand**, and hereafter will make the following:

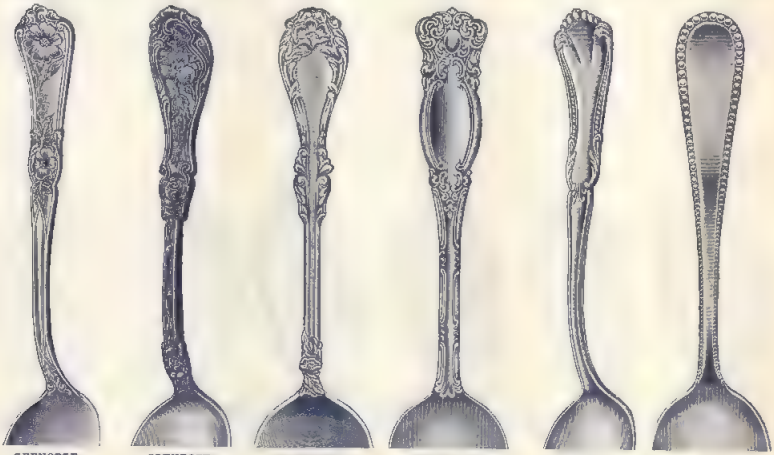
WM. A. ROGERS SXR (Sectional Re-inforced)

Tea Spoons bearing this mark are guaranteed to strip not less than **three ounces** of pure silver per gross. Parts most exposed to wear will be **re-inforced** by their special process with full triple plate. All other staple pieces in proportion.

WM. A. ROGERS SXXXR (Sectional Re-inforced)

Tea Spoons bearing this mark are guaranteed to be plated with **FULL SIX OUNCES** of pure silver per gross. Parts most exposed to wear are **re-inforced** with an **additional heavy plate** by their special process, making them equal in service to quadruple plate. Other staple pieces in proportion.

They always use in their Horse-Shoe brand 21 per cent German silver base, which is **whiter, harder** and **more durable** than the grades used by other manufacturers. This well-known fact, coupled with their special plate described above, warrants the dealer in guaranteeing the Horse-Shoe brand superior to any and all other makes.



GRENOBLE PATTERN
French Grey

Tea Spoons

No.	Per doz
1555 SIR plate	$ 6.40
1556 SIXR "	8.95

Dessert Spoons

1547 SIR plate	$ 9.10
1548 SIXR "	11.75

Table Spoons

1549 SIR plate	$10.15
1560 SIXR "	13.90

Dessert Forks

1551 SIR plate	$ 9.10
1552 SIXR "	11.75

Medium Forks

1553 SIR plate	$10.15
1554 SIXR "	13.90

Butter Knives

1555 SIR plate	$11.20

Sugar Shells

1556 SIR plate	$9.60

GLENROSE PATTERN
French Grey

Tea Spoons

No.	Per doz
1557 SIR plate	$5.10
1558 SIXR "	6.95

Dessert Spoons

1559 SIR plate	$ 9.10
1560 SIXR "	11.75

Table Spoons

1561 SIR plate	$10.15
1562 SIXR "	13.90

Dessert Forks

1563 SIR plate	$ 9.10
1564 SIXR "	11.75

Medium Forks

1565 SIR plate	$10.15
1566 SIXR "	13.90

Butter Knives

1567 SIR plate	$11.20

Sugar Shells

1568 SIR plate	$9.60

HANOVER PATTERN

Tea Spoons

No.	Per doz
1569 SIR plate	$ 5.10
1570 SIXR "	6.95

Dessert Spoons

1571 SIR plate	$ 9.10
1572 SIXR "	11.75

Table Spoons

1573 SIR plate	$10.15
1574 SIXR "	13.90

Dessert Forks

1575 SIR plate	$ 9.10
1576 SIXR "	11.75

Medium Forks

1577 SIR plate	$10.15
1578 SIXR "	13.90

Butter Knives

1579 SIR plate	$ 1.20

Sugar Shells

1580 SIR plate	$9.60

WARWICK PATTERN

Tea Spoons

No.	Per doz
1581 SIR plate	$ 6.40
1582 SIXR "	8.95

Dessert Spoons

1583 SIR plate	$ 9.10
1584 SIXR "	11.75

Table Spoons

1585 SIR plate	$10.15
1586 SIXR "	13.90

Dessert Forks

1587 SIR plate	$ 9.10
1588 SIXR "	11.75

Medium Forks

1589 SIR plate	$10.15
1590 SIXR "	13.90

Butter Knives

1591 SIR plate	$11.20

Sugar Shells

1592 SIR plate	$9.60

MARCELLA PATTERN

Tea Spoons

No.	Per doz
1593 SIR plate	$5.10
1594 SIXR "	6.95

Dessert Spoons

1595 SIR plate	$ 9.10
1596 SIXR "	11.75

Table Spoons

1597 SIR plate	$10.15
1598 SIXR "	13.90

Dessert Forks

1599 SIR plate	$ 9.10
1600 SIXR "	11.70

Medium Forks

1601 SIR plate	$10.15
1602 SIXR "	14.20

Butter Knives

1603 SIR plate	$11.20

Sugar Shells

1604 SIR plate	$9.60

BUDORA PATTERN

Tea Spoons

No.	Per doz
1605 SIR plate	$5.10
1606 SIXR "	6.95

Dessert Spoons

1607 SIR plate	$ 9.10
1608 SIXR "	11.75

Table Spoons

1609 SIR plate	$10.15
1610 SIXR "	13.90

Dessert Forks

1611 SIR plate	$ 9.10
1612 SIXR "	11.75

Medium Forks

1613 SIR plate	$10.15
1614 SIXR "	14.20

Butter Knives

1615 SIR plate	$11.20

Sugar Shells

1616 SIR plate	$9.60

1911 Correja Car

The 1911 model of the Correja Car, manufactured by the Correja Motor Car Co., offices 1851 Broadway, N. Y., shows many refinements but few changes. The only real deviation from 1910 practice is seen in the motor, where the "L" head type has been abandoned and the "T" head adopted for the purpose of obtaining a more evenly balanced motor with big valves (2½ inches in diameter) properly cooled.

The Motor.

The motor has four cylinders cast in pairs with a bore of 4¼ inches and 5-inch stroke. The pistons are 5½ inches long and have four rings located above the 1 3-16 inches hollow piston pin. A phosphor bronze bearing is used at the upper end of the connecting rod where it engages with this pin.

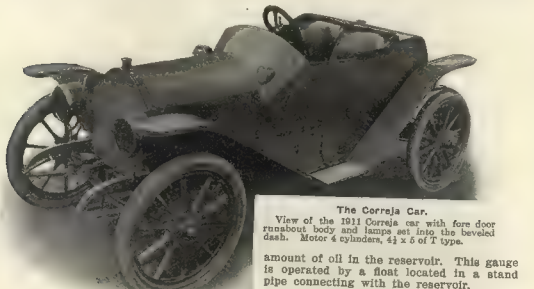
The connecting rod, which is 11 inches in length, is drop-forged from high carbon steel and fitted with die cast nickel babbit bearings of the marine type at the crankshaft end.

The crankshaft is also drop-forged from a high carbon steel and has bearings of more than ample proportions, that at the rear or flywheel end being 2 inches in diameter and 3½ inches long, while the center and front bearings are each 2 inches in diameter by 2½ inches long.

All cam shaft, pump and magneto gears are enclosed in an oil tight compartment cast integral with the crank case. The crank case is in two parts, the upper portion containing the crankshaft bearings and the lower the oil reservoir.

Lubrication.

Motor lubrication is by means of a gear driven pump connected with the cam shaft and located on the left side. This pump forces the oil from the reservoir into a header cast into the upper half of the crank case, and from there to the three crankshaft bearings. It then passes through ducts drilled in the crankshaft to each of these connecting rod bearings, after which the surplus flows into the crank case, where it is maintained at a constant level, lubricating the rest of the motor by the splash system. An oil gauge is provided on the left side of the motor, indicating the amount of oil in the reservoir. This gauge is operated by a float located in a stand pipe connecting with the reservoir.



The Correja Car.

View of the 1911 Correja car with fore door runabout body and lamps set into the beveled dash. Motor 4 cylinders, 4¼ x 5 of T type.

Ignition.

Ignition is by a U & H high tension magneto located on the right side of the motor. Provision is also made for a complete double system of ignition with batteries, coil, commutator and two sets of spark plugs, which, if the customer desires, may be installed at a reasonable cost.

A double jet carburetor is used, differing in the spray nozzles and mixing chamber from the usual design. The mixing chamber is a tube of the Venture form, containing two separate jets from which the gasoline is drawn in a spray. The throttle is a rotary valve and combines an auxiliary air valve through its horizontal center.

Clutch and Transmission.

A 14½ inch leather faced cone clutch, having a 2⅞ inch face, engages with the flywheel, from which the power is transmitted by means of a propeller shaft enclosed in a torsion tube to a three speed selective transmission located on the rear axle

The rear axle is of the semi-floating type and unusually heavy for a car of the power

and weight, and all drive gears, together with those in the transmission, are cast from chrome nickel steel.

Brakes.

The two sets of brakes are located on the rear wheel drums. The service brake is external contracting, the emergency brake internal expanding and operated in the usual manner by foot pedal and hand lever. The equalizer bars are arranged in an original manner, in that the frame is not slotted, allowing the ends of the bars to extend through, but the bars are cut to the exact length to fit inside the chassis frame and work in bronze guides riveted to the side members of the frame. The pressed steel frame is upswept at the rear, giving a low body position and at the same time good rear axle clearance.

Semi-elliptic springs 36 inches long are used in front and three-quarter scroll elliptic on the rear.

Body.

The body design is unusual and attractive. The body sets very low and may be described as being of the gunboat type. The hood of the dash extends well back and fore doors are provided.

The gasoline tank, located on the rear, carries out the gunboat effect, and being so located, leaves room under the seat for carrying space. Additional carrying space is also provided for in the rear of the gas tank large enough to permit of carrying a suit case.

The standard color is gray, but special colors may be had if desired.

Equipment.

Each car is equipped with two electric lights set into the hood of the dash as shown, an electric tail lamp, horn and a tool and tire repair kit.

Made necessary by the increasing demand for Michelin products, the Michelin Tire Co., of Milltown, N. J., has just completed a tube making building. This is 54x212 feet, and is a part of the 19,499 square feet of floor space which have recently been added to the Michelin plant. This makes 14 separate buildings used for the manufacture of Michelin pneumatic tires, tubes and accessories

The L. C. S. Motor Co. is the title of a new company just formed by J. M. Carmer, Charles La Due and C. C. Snyder, who were formerly New York agents for three makes of unlicensed cars. The company will manufacture a 40 H. P car for $1560, at their factory, at Ft. Wayne, Ind.

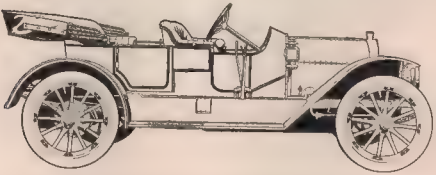
The Case Motor Car Co. was recently incorporated, and will soon start the manufacture of commercial vehicles in New Bremen, Ohio. O. T. Boesel is president of the new company, which has a capital of $50,000; W. E. Case is vice-president and general manager; Wm. Grothaus, assistant manager; A. C. Sittlage, secretary and treasurer.

The White Co., of Cleveland, Ohio, has just sold six 3-ton and two 1½-ton trucks to W. & J. Sloane & Co., of New York City. This is no doubt the largest order for trucks of this size ever sold.

The Cunningham Piano Co., of Philadelphia, Pa., has put into operation a 4000 pound Hewitt motor truck. It carries seven pianos at one time and greatly facilitates suburban delivery.

The Mercedes Repair Co. is erecting a three-story fireproof brick factory, at a cost of $35,000, in Long Island City, N. Y., on a 100x123 plot which they purchased. Commercial vehicles will be manufactured in the new building.

Columbia 1911



One of the THREE BEST Cars Built

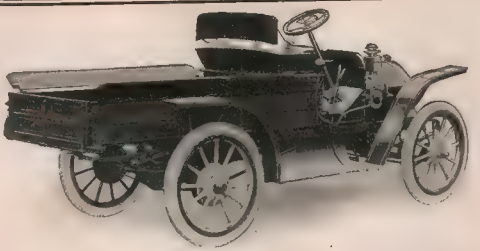
NEW CARS FOR 1911. For the season of 1911 there are two Columbia gasoline cars. The well-known and widely appreciated Mark 48 car is continued with certain refinements, and in 1911 is to be known as Mark 48 Jot 5. There is, too, a new high-powered model, Mark 85. This new motor car includes every motoring desire, and in essentials measures up to standard practice.

Mark 85 MOTOR. Motor is of "T-Head" type, with cylinders $4\frac{1}{2}$ x $5\frac{1}{2}$ inches and cast in pairs. The water jacket areas are large and include cooling of valve seats and stems. The crankshaft and moving parts are closely machined and carefully ground.

MOTOR IGNITION. The new Bosch *double* system of ignition, using eight plugs, with Bosch high tension magneto and Exide sparking battery and timer with non-vibrating coil, allows for using the battery system or the magneto system or both systems in common. Two absolutely independent sources of current and two absolutely independent means of distribution.

MOTOR LUBRICATION. Motor lubrication is positive and complete. A pressure pump of 15 pounds capacity forces oil from the crank case reservoir through a conduit cast within the motor section, with leads to all main and secondary bearings. The motor has just as perfect a splash system as any motor depending upon splash, and a positive circulation of oil as well.

MOTOR COOLING. A modish cooler of high peak and current fashion cools the circulating water, aided by a powerful ball bearing eccentrically mounted fan with aluminum blades, and water is circulated by an efficient shaft driven centrifugal pump with spun brass connections of graduated diameters.



THE CHAINLESS TRUCK!

A SHAFT-DRIVE AND FULL FLOATING REAR AXLE MAKE THE GLEASON SUPREME AMONG LIGHT DELIVERY CARS!

¶ The Chain Drive is all O.K. on a 2 or 3-ton truck. But not so on a medium light-weight Commercial Car where **both** speed and efficiency are required. ¶ **GLEASON** Commercial Cars are made on one chassis only—a chassis that has stood the test of five long years without a single radical change. The **GLEASON** shaft-drive does away with the annoyance of cumbersome chains. The **GLEASON** Full Floating Rear Axle eliminates all rear axle trouble.

The GLEASON

is a stylish and a practical Commercial Car. It is furnished with either closed or open body. Carrying capacity, 1000 pounds. A sturdy car and a substantial car. Yet a model of simplicity in construction. Made with an eye single to its thoroughness—its completeness. Pneumatic or cushion tires, as desired.

$1050 to $1400

¶ Sliding gear transmission, with three speeds forward; multiple disc clutch with cork inserts and full floating rear axle.

¶ The **GLEASON** is famed for its economical upkeep. Its high-class construction leaves practically nothing to get out of order or go wrong. And its powerful engine enables it to go over any kind of road and in all kinds of weather.

¶ This car will stand the closest investigation—will make good under the severest test.

¶ May we supply you with full information? Will you kindly write or wire us to-day? We want red-blooded agents in all unoccupied territory.

K. C. Vehicle Co., Manufacturers, Kansas City, Mo.

EXCELSIOR AUTO-CYCLE

ALWAYS MADE GOOD

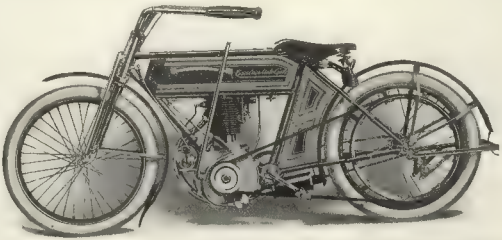
Better Than Ever for 1911

The entire 1911 line, including a single cylinder with either magneto or battery ignition and a six horsepower Twin with magneto ignition, is now ready for inspection.

The 1911 models retain all the tried and proven features of previous models, with several new ones worthy of your consideration.

Low Saddle — High Clearance

By the change in the form of only one frame tube, we have attained a saddle position lower than found on any other machine, and retain the road clearance of the 28-inch wheels, making the 1911 Excelsior Auto-Cycle the safest and most comfortable roadster ever built.



The Excelsior Double has been through a year of severe test at all points and has been developed to a practically Perfect Machine, with all the heretofore objectionable features of the twin motor absolutely eliminated. **If you are not an Excelsior Agent you ought to be.**

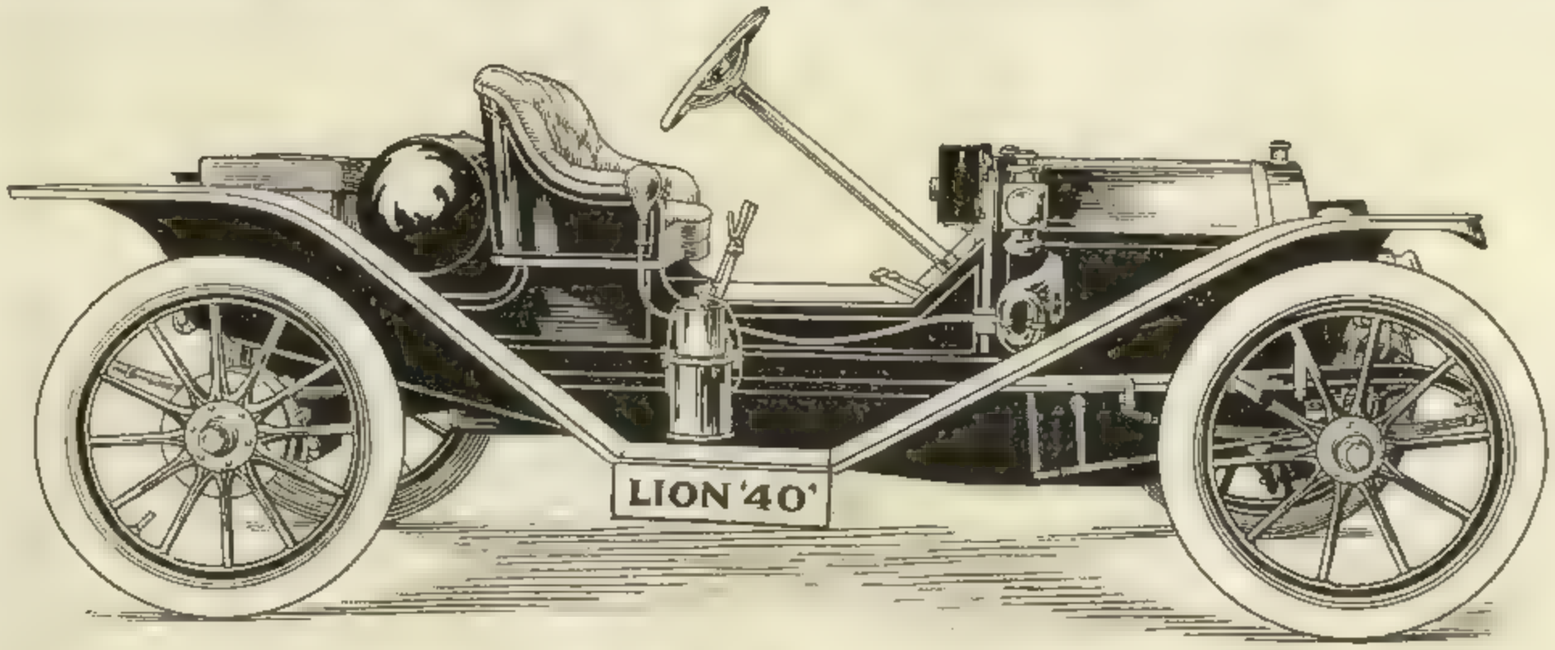
There is still some unassigned territory. Write now and get in Right.
Our new 1911 Advance Catalog A11 is now ready for distribution.

EXCELSIOR SUPPLY COMPANY

Randolph Street Bridge Established 1876 **CHICAGO, ILL.**

The Get There Kind

This LION "40"



36-Inch Wheels

112-Inch Wheel Base

1911 GENTLEMAN'S ROADSTER, $1650

"RUNS LIKE SIXTY"

Always reaches your destination, whether in sand, mud or on the steepest hill.

This is not an assembled car—it is made at our factory, Adrian, Michigan.

The output for our 1911 Models is to be 2000 cars. We could make more but NOT without jeopardizing the quality consistent with skilled workmanship in a factory manufacturing its own product.

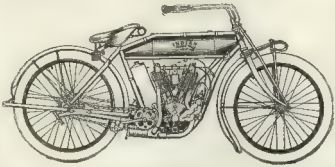
☞ SOME DESIRABLE AGENCY TERRITORY OPEN

LION MOTOR SALES COMPANY, 650 WOODWARD AVENUE DETROIT, MICHIGAN

GENERAL AGENTS UNITED STATES AND CANADA

THE DEPENDABLE
INDIAN

Some Recent Performances by Stock Machines



Pike's Peak climbed by 3 Indians, Sept. 24.

Columbus, O., Stock Indian, in 100-Mile Race, November. Over 8 miles ahead of ported racers.

Denver, 100-mile amateur race; 4 Indians lapped field of 31. Winning first four places.

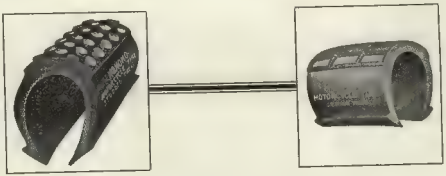
Ask for Catalog P.

THE HENDEE MFG. CO., Springfield, Mass.

CHICAGO BRANCH
1251 Michigan Ave.

[MEMBER M. M. A.]

LONDON DEPOT
184 Gt. Portland St.



Kokomo Tires. The Kind that Does the Business

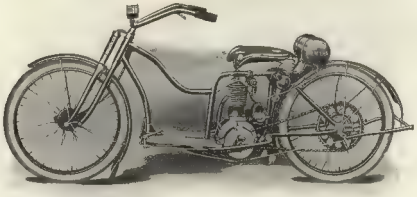
KOKOMO RUBBER COMPANY

KOKOMO, IND., - - U. S. A.

1911 NEW ERA AUTO-CYCLE

You Can All Have A New Era

Two Speed Transmission, Free Motor, Motor Started by Means of a Crank, Comfortable Upholstered Form Seat, Foot Board, 62″ Wheel Base, Internal Expanding Brake, Cushion Spring Fork (No Pedals).



Why not be comfortable while riding a motor-cycle? You can be if your mount is a New Era 1911 Model. The New Era Auto-Cycle is the happiest combination of Comfort, Safety, Speed, Durability and True Economy.

DON'T mistake it for an ordinary motor-cycle—it's extraordinary. The only Auto-Cycle without pedals, without the old-fashioned saddle, without vibration, worked without work. WHY? HOW? Its motor, an air-cooled 4 and 6 H. P. single cylinder, is started by means of a crank, like an automobile, in a few seconds, without pedaling. NO SADDLE SORENESS EITHER, for the form seat is leather upholstered, and the position of it between the wheels prevents it. The foot-board helps lots.

No hill too high, no street too crowded for the New Era with its two-speed transmission, which makes the rider the master over every emergency. Our 1911 catalogue tells the rest. Shall we send it?

THE QUESTION REMAINS:

Do you want the New Era Agency for 1911?

WRITE US TODAY

The New Era Auto-Cycle Company

9 Dale Avenue, Dayton, Ohio

DISTRIBUTORS:

The New Era Motor Co., 265 S. Broadway, Denver, Col.
Mr. W. D. Andrews, 632 Main Street, Buffalo, N. Y.
The Morse Motor Sales Co., Cleveland, Ohio

OTTO 1911 LINE

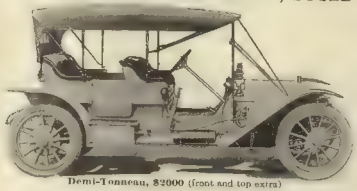
BUILT BY

The Otto Gas Engine Works

Largest and Oldest Builders of Gas Engines in the World

Roadster, $1950 (including all equipment shown)

THE CAR OF SIMPLICITY, STYLE AND SERVICE



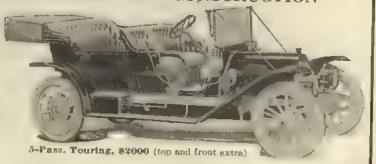
Demi-Tonneau, $2000 (front and top extra)

SPECIFICATIONS

123-inch Wheel Base
30-35 Horse Power
Bosch Double Ignition
34-inch Wheels
Full Floating Rear Axle
14-inch Brake Drums

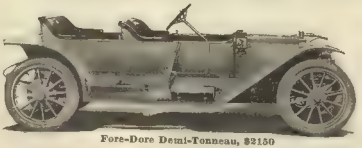
PERFECTION IN DESIGN AND CONSTRUCTION

One Standard Chassis throughout entire line
Low Center of gravity
No universal joints
Floating shaft drive
Exceptional spring suspension



5-Pass. Touring, $2000 (top and front extra)

LIBERAL AGENCY TERMS AND TERRITORY



Fore-Dore Demi-Tonneau, $2150

Backed by 40 years' engine-building experience in Europe and America, and by 10 years' automobile building experience in Europe.

Catalog 1911A Now Ready

OTTO MOTOR CAR SALES CO.

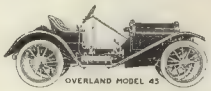
32nd and Walnut Sts. **SOLE DISTRIBUTORS** PHILADELPHIA, PA.

20,000 buyers are now users of Overland Motor Cars

A year ago there were but 4000

That should be broad enough intimation for you to get in touch with us at once, to post yourself regarding a most attractive line and the simplest selling proposition any maker ever had to dispose of.

22 four-cylinder cars for 1911 from 20 to 40 H. P. at $775 to $1675


OVERLAND MODEL 45

OVERLAND MODEL 50

OVERLAND MODEL 52

Fore-door models sell at the same price as open fronts

All prices include magneto and full lamp equipment.

Send for our Advance Catalog

The Willys-Overland Co.
TOLEDO, OHIO

How Much Air in Your Tires?

You should know to a certainty — never guess — it's costly. Get an **$1.25**

ALLEN TYROMETER
TIRE PRESSURE GAUGE

Tells you accurately and instantly exactly what your tire pressure is. Simply press TYROMETER on sliding band valve — indicator immediately denotes pressure and stays fixed until released.

Beautifully finished—made of finest material — lasts indefinitely — absolutely accurate. You need an accurate tire gauge more than anything else—get ALLEN'S TYROMETER. Price, $1.25, at your dealer or from us.

Dealers, write us for attractive proposition on our Tyrometer

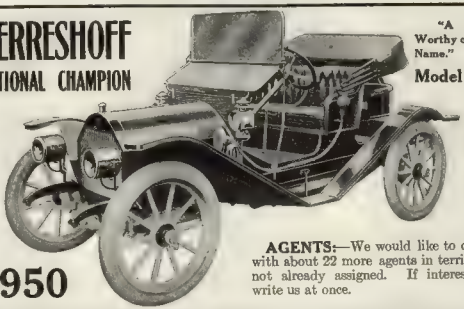
ALLEN AUTO SPECIALTY CO.
1926 Broadway, New York

Minnesota—O. Fenstermacher, Minneapolis
Texas—Texas Rubber Supply Co., Houston and Dallas
Chicago—Overland Sales Co., 2224 Michigan Ave., Wholesale Agents for West

HERRESHOFF
NATIONAL CHAMPION

"A Car Worthy of its Name."

Model 25



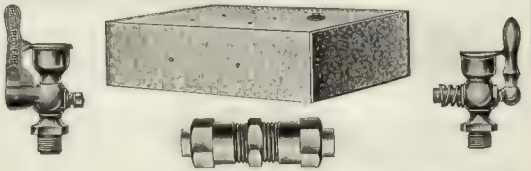
$950

AGENTS:—We would like to close with about 22 more agents in territory not already assigned. If interested, write us at once.

READ THESE SPECIFICATIONS —4-cylinder Herreshoff motor, H. P. 24. Left-hand drive. Right-hand control, one lever center of car. Bosch High-tension Magneto. Selective sliding gear transmission, 3 speeds ahead and reverse. Straight line drive. Body fitted with irons for top. 32 x 3 in. tires. 98-inch wheel-base. Five lamps, including two Electric headlights—60-amp. storage battery. Color: Body, Herreshoff Royal Blue, with cream running gear. Other specifications given in detail in our complete illustrated catalog, which is mailed to your home upon request.

OTHER MODELS:—Touring Car (105 in. wheel-base), Five-passenger, $1500; Tourabout (100-in. wheel-base), $1500. Let us send you our Complete Catalog—Address Department G.

HERRESHOFF MOTOR COMPANY, General Offices and Factories: **Detroit, Mich.**



WE make Tanks, Tubing Connections, Brass Handles, Priming Cups, Oil Pumps, Hand and Pedal Controls, Gasoline Strainers, Fans, etc. *Write for catalogue and prices.*

Acorn Brass Mfg. Co.

Green, Fulton and Peoria Streets, Chicago, Ill.

Completely equipped. Nothing to buy but License Tag and Fuel
Price, $4000

"The 1911 Owen"

50 H. P. Motor, Long Stroke, 42-in. Wheels, 120-in. Wheel Base. Weight, complete, 3400 lbs.

Why Experienced Motorists Buy the "Owen"

The men who have been motorists for years—who can drive their own cars—whose experience enables them to figure out ***practical*** improvements, are the men who are buying OWEN cars.

They are doing so because the OWEN ***embodies*** those improvements they have been wondering why other manufacturers have not provided in their cars.

There are other high grade cars having the best materials and workmanship, but the OWEN represents ideas that are easily ***two years ahead*** of present standards of motor car construction instead of being a 1910 model with a few refinements.

OWEN ***left-hand drive*** with ***right-hand control*** gives the driver a clear view of the road behind in making a turn to the left or completely around. It permits of easy access to the front seat from the ***curb*** side.

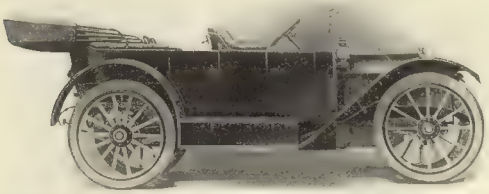
OWEN long stroke motor (4½-inch bore by 6-inch stroke) develops greater turning power at slow speeds than the "squared" or nearly squared motor, reducing ***vibration*** and ***wear*** and decreasing fuel expense.

OWEN 42-inch wheels decrease tire expense by giving a much greater tire mileage. The large wheels easily roll over road obstructions that make rough going for wheels of smaller diameter.

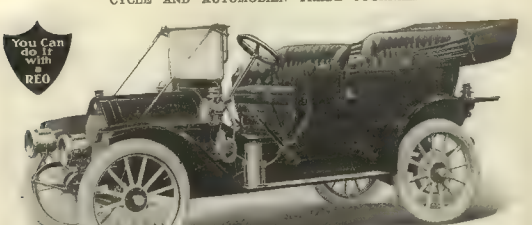
OWEN front and rear dropped frame gives a ***lower*** center of gravity than that of most cars, yet provides ample road clearance.

OWEN cars are ***completely*** equipped for touring—nothing to buy but license tag and fuel.

TO DEALERS.—Some desirable territory can be closed by progressive dealers who make immediate application.



1622 E. Grand Boulevard **OWEN MOTOR CAR COMPANY** DETROIT, MICHIGAN



1911 Reo "Thirty" $1250

Top and Merger Automatic Windshield extra

It is not, by any means, a matter of price. One kind of automobile gives you a certain set of qualities, another gives you another set. The main question is, which set do you want? Price and cost of maintenance come later.

There are two kinds of car: light and heavy.

The heavy high powered cars give plenty of power, can use considerable of that power and are comfortable on smooth roads. Some of them are very reliable, some very well built.

Some—the cheap imitations—are not.

The Reo is built along the same general engineering lines as the high-powered cars at four to six thousand dollars, but with an entirely different aim. The Reo has large *net* power, but it also has certain qualities not found in any other car.

These qualities are: comfort at all speeds; full use of power on all roads; safety; buoyancy. These are possible in a light car of high power; they are not possible in any other type of car.

The Reo motor is of moderate size, but, due largely to its large valves, generates a large amount of power, which is *conserved* throughout the car. This light motor makes light construction possible throughout the mechanism and supports. Weight is saved everywhere.

Then, the car being light, it can have *easy springs*, which not only give more comfort to the passengers, but save the strain on the mechanism that comes from road shocks, and afford a still greater margin of endurance with light mechanism.

Then *safety*. The light-weight Reo is very easily accelerated and retarded.

The *Reo can use all its net power* on average and rather rough roads, without injuring mechanism or making the passengers uncomfortable.

Buoyancy. The Reo has a buoyancy not found in any other car. This gives an exhilaration to Reo motoring entirely unknown in ordinary motoring—this is one of the very greatest pleasures of this delightful sport. All this is due to the splendid combination of light weight and high power.

Strength. The cost of the Reo is put into quality not weight Every part is the best possible material. Reo cars are strong and reliable. The long public and private record of the Reo for get-there-and-back-ability proves that.

Now for price and economy. This high-power but light-weight Reo is only $1250, and, on account of its high-grade construction and light weight, costs less than any other car for tires, gasolene and repairs

Four-passenger Roadster, same price. Reo "Twenty-three" Four-cylinder Runabout $850

Send for Catalogue which goes deeper into the matter

R M Owen & Co Lansing Michigan General Sales Agents for the Reo Motor Car Co

Licensed under Selden Patent

Jackson

UNIT POWER PLANTS
KEEP OIL IN AND DIRT OUT

A Complete Line for 1911

Model 51, $2200—5-passenger Touring Car with provision for two extra seats. Motor 4⅝ x 4⅞. 120-inch wheel base. Wheels 36 x 4. Also furnished as a four-passenger Tourebout.

Model 41, $1700—5-passenger Touring Car. Motor 4½ x 4½. 110-inch wheel base. Wheels 34 x 4. Also furnished as a four-passenger Tourabout.

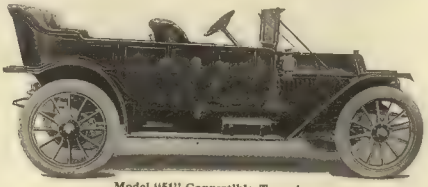
Model 38, $1650—Full Torpedo—left hand drive—center control. Motor 4½ x 4½. 115-inch wheel base. Wheels 34 x 4.

Model 35, $1250—5-passenger Touring Car. Motor 4 x 4. 105-inch wheel base. Wheels 32 x 3½.

Model 30, $1250—5-passenger Touring Car. Motor 4 x 4. 105-inch wheel base. Wheels 32 x 3½.

Model 25, $1100—2-passenger Roadster—Gasoline tank at rear. Motor 3½ x 4½. 105-inch wheel base. Wheels 32 x 3½.

Convertible Torpedo—Models "51" and "41" will be fitted with removable front doors and panels at an extra charge of $50, and Models "35" and "30" at an extra charge of $40.



Model "51" Convertible Torpedo

Jackson Automobile Company

Jackson, Michigan — Licensed under Selden Patent

Write for Catalog "A"

MR. DEALER, You Can Vouch for a CAR BUILT LIKE THIS

THE 1911 SCHACHT, 40 H. P.

is the biggest dealer's proposition of the year. Here's a big 40 Horse Power—with 120-inch wheel base—34-inch wheels—selling for only **$1385.** A glance at its specifications will convince you. Note its handsome appearance—sturdy construction.

The Schacht 40 is built in the two types—touring car and roadster. It has an 18-inch steering wheel, and all metal body and a Bosch dual ignition system among its other high-grade features. Everything is complete with the price, except the top. It will satisfy your most critical customer.

Owners will Vouch for This One

THE SCHACHT "THREE-CARS-IN-ONE"

3 Cars

Hundreds of owners are subjecting this car to the hardest **all day** service in every part of the country. This Schacht "3-in-1-car" is widely known as **the car for every service.**

Five minutes converts them from a 2-seated runabout to a 4-passenger family car, or a sturdy, serviceable delivery wagon. The Schacht in any of its three styles is superior to any car of near the price. Its ability to stand hard knocks is a matter of record.

One Price

WIRE OR WRITE—Territory in unallotted parts of the country being rapidly taken up. Several choice territories are still open.

The Schacht line is one of the best money-making propositions among low-priced cars.

It is a line which will satisfy the demands of **any customer you have.**

Get behind this quick-selling line now for 1911. Get catalog and terms. Address

$850

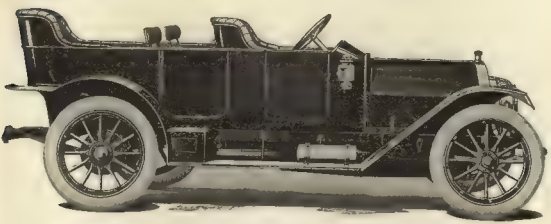
THE SCHACHT MOTOR CAR COMPANY

2805 Spring Grove Avenue - - - Cincinnati, Ohio

Model F Special
7-passenger Touring
Car, Fore Doors
$2,900

Speedwell

All 1911 Models
Are 4 cylinder, 55
H. P., 121 in.
wheel base



A good many people have changed their minds on the high-priced car question since they have seen the 1911 Speedwells.

These magnificent cars, in the few weeks they have been shown, have established an entirely new standard for automobile values.

A comparison of the Speedwell with other cars will show you what you will get for your money in the one case, and how you can wastefully spend more money, yet buy no more *value*, in the other.

Study the illustration. Then turn to the price list. Bear in mind that the Speedwell courts and urges comparison with the world's most perfect motor cars.

The 1911 Speedwell literature gives you just the evidence you want on this subject of values—really the one important thing for you to consider. Write today for it.

Model H—2-passenger Roadster	$2500
Model C—4-passenger Toy Tonneau	2625
Model D—5-passenger Touring Car	2650
Model K—5-passenger Close Coupled	2650
Model G—4 passenger Torpedo	2700
Model H Special—4-passenger Toy Tonneau, Fore Door	2700
Model D Special—5-passenger Touring Car, Fore Doors	$2750
Model F—7-passenger Touring Car	2800
Model F Special—7-passenger Touring Car, Fore Doors	2900
Model E—7-passenger Limousine	3850

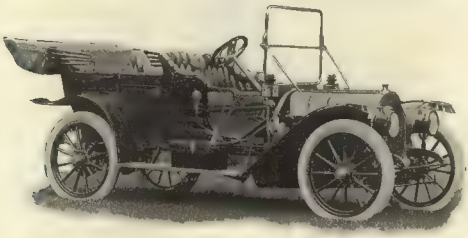
The Speedwell Motor Car Company

60 Essex Avenue, Dayton, Ohio

Licensed under Selden Patent

1911 ANNOUNCEMENT

THE AUBURN



Model Y—$1700.00. Now Ready for Delivery

COMPLETE PERFECTION—these words convey in a small measure what dealers think of the AUBURN product for 1911.

To the manufacturers, they represent ten years of steady, persistent progress in the development of motor cars. *The result*—a car that stands out distinguished in appearance.

The elegant lines of the AUBURN demand its receiving more than passing consideration when in comparison with the highest priced cars being manufactured. *No car of its size and price excels it.* No taint of cheap construction can be found in any part of this machine. All material entering into its construction is the best obtainable and the finish and general workmanship are the net result obtained from applied high-class mechanical skill.

The shrewd buyer realizes that the amount of service that an automobile renders is more important than the initial price, and on the basis of actual service AUBURN cars are the cheapest on the market.

The chassis mounts touring, close coupled; fore-door and roadster bodies. Model L "30", on same general lines and construction as "Y"; 110″ wheel base; 34″ wheels, **$1400.00.** Models G and K, **$1000.00.**

SPECIFICATIONS OF MODEL "Y"

Motor, four cylinders, 4½ x 5″; 5-bearing crank shaft; 36″ wheels; Hess-Bright ball bearings in transmission; Leather-faced cone clutch; Semi-elliptic front spring; ¾ elliptic rear. Selective transmission; 120″ wheel base. Shaft drive with bevel gear differential. Painted royal blue with fine white stripe. STANDARD EQUIPMENT: —3 oil lamps; 2 gas lamps with generator; Remy magneto. Price, **$1700.00.**

Territory open for the right men

AUBURN AUTOMOBILE COMPANY

AUBURN, INDIANA

Glide 45—7-Passenger Touring Car—$2000

The Glide Line for 1911

45 H. P. Cars——————$2000

sets an absolutely new standard of automobile value.

Glide Cars have now reached a stage of development where they can be manufactured and sold on the same basis as any other staple commodity. In this they are three years ahead of other makes, and for this reason 1911 Glide prices are three years ahead. They represent the lowest possible price consistent with the manufacture of a strictly high-grade, dependable machine of "the high-powered class."

We are content with a fair manufacturing profit on Glide Cars. Such a profit as is obtained in other lines of manufacture. Our expense for dies for drop-forging and pressed-steel parts have been absorbed.

Our output has increased. A new factory equipped with every device for cutting manufacturing cost to a minimum has been built. These factors and a determination to make the Glide the most economical investment possible in the purchase of a permanently satisfactory car are responsible for the new Glide prices.

The 1911 Glide line consists of

Six Splendid Cars

43/4x5 motor developing 45 H. P. in all models.

Special "45," 7-passenger Touring Car,	**36x4½**	**tires**	**$2000**
Special "45," 5-passenger Touring Car,	**36x4**	**tires**	**$2000**
Special "45," Roadster	**36x4**	**tires**	**$2000**
5-passenger Torpedo	**36x4½**	**tires**	**$2150**
Scout	**40x4**	**tires**	**$2000**
Commercial Delivery Wagon	**36x4½**	**tires**	**$2000**

To purchasers and dealers it offers a wonderful opportunity. Our advance announcements giving specifications and telling "How we proved every claim we make—in the recent Glidden Tour" will be mailed on request. Write for it today. Address

The Bartholomew Co.

210 Glide St. Licensed under Selden Patent **Peoria, Ill., U. S. A.**

5-Passenger Touring Car
$1850.00

No Car is Better than its Engine

The CASE Car

—the Car with a Famous Engine

(Licensed under Selden patent)

¶ No car is better than its engine. Whether you learn this when you buy or not, you certainly will afterwards. When you buy there are many things to attract you away from the engine—most of it often intended for this very purpose. But unless you insist on getting down to this fundamental question **then** the chances are that afterwards it will take your whole attention.

¶ The Case Car, in appearance, style and appointment offers all that can be had in any car. But as these things can easily be bought on the open market we take little credit for that.

¶ But the Case Car offers one feature that cannot be bought any place else—its famous engine. **Handle the car with this famous engine.** We are allotting just 1500 Case Cars and suggest an early reservation.

J. I. CASE THRESHING MACHINE CO.

Incorporated

Dept. 12, **Racine, U. S. A. Wisconsin**

MIDLAND

1911 Model L2, $2100

40 H. P.

BRIEF SPECIFICATIONS

POWER PLANT—Of special "MIDLAND" Unit Construction having the ONLY FLEXIBLE THREE POINT SUSPENSION. This Power Plant is entirely of "MIDLAND" design and construction and is being fully protected by patents.

MOTOR—4½" x 5"—T head cylinders cast in pairs. 40 H. P. All bearing surfaces, such as cylinder bore, pistons, piston rings, piston pins, crank and cam shaft bearings, valve lifter, etc., accurately ground to finish within 1-1000 part of an inch.

CLUTCH—Multiple Disc Type combined with small brake which stops transmission gear spinning and allows noiseless and indestructive shifting. Clutch centre disc made of bronze with Raybestos lining, two outside discs steel, a combination which eliminates the slipping and wear of the metal type, retaining all its smoothness of action.

TRANSMISSION—Selective sliding type, carefully tempered nickel steel alloy gears with broad faces. Gear shifting accomplished by a special "MIDLAND" patented control system, exceptionally easy of operation.

LUBRICATION—The entire motor is lubricated by a circulating and splash system entirely self contained. A mechanical indicator on dash of positive operation shows at all times the condition of oil circulation. Transmission, universal, differential, wheel bearings and steering gear are packed in hard grease which only needs renewal once in three to five thousand miles. Oilers are liberally supplied for all spring bolts, steering connections, etc.

STEERING GEAR—"MIDLAND" design and construction of worm and nut type, semi-reversible to prevent sudden strain from steering knuckles and connecting links. 18" solid mahogany hand wheel with corrugated inner edge.

FRAME—Pressed steel construction, upsweept at rear to give wide spring opening and offset in front to allow close turning.

FRONT AXLE—Special pressed steel design. Hollow with rectangular cross section. Box girder type. Stronger and lighter by actual test than drop forged I-section.

REAR AXLE—Pressed steel, full floating type. Propeller shafts, drive shafts and differential can be entirely removed without even jacking up wheels or in any way disturbing the axle housing and spring connections to frame. Two complete independent sets brakes both internal, entirely protected from wind and dust.

TIRES—34" x 4."

WHEEL BASE—115."

SPRINGS—Front, semi-elliptic. Rear, three quarter elliptic, very long and wide, making car unusually easy riding.

BODY AND RUNNING GEAR—Painted Brewster Green, wheels choice of Brewster Green, Straw Color or Red. Upholstering and finish of the highest quality done entirely in our own shops. Aluminum foot boards, tonneau steps and runboard matting, and beautiful mahogany dash with solid black walnut edge.

We will also manufacture during 1911 a limited number of our Model L-1 Midlands, a continuation of our Model "L" of 1910 at $2,000. (Windshield extra). And a Model "K" a big roomy 50 H. P. Touring Car, with 36" wheels, 120" wheel base, etc., at $3,250. (Windshield extra).

Midland Motor Company

MOLINE, ILLINOIS - - - U. S. A.

Licensed under Selden Patent

1911 Owen Berlin Limousine, $5400

"The 1911 Owen"

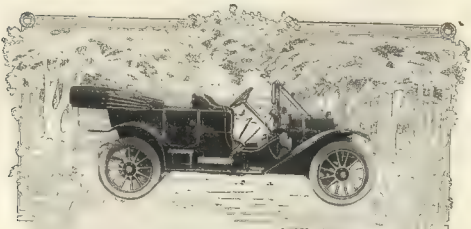
THE 1911 OWEN BERLIN represents the highest development of closed car construction. It is the embodiment of luxurious comfort with exclusive features affording greater convenience than can be enjoyed in other cars.

The easy running qualities of the OWEN BERLIN are unequalled because of large wheels, OWEN spring suspension and minimum vibration from the long stroke motor. Combining these features with interior appointments of the most luxurious character, the OWEN BERLIN (seating six) is a car certain to please the most exacting.

Catalog and detailed descriptive matter sent upon request.

Owen Motor Car Company

1622 East Grand Boulevard DETROIT, MICH.



There are two classes of buyers who prefer

The Superb Haynes

To each of these classes this unusual car at $2000 is an ideal car. You probably belong to one of these classes.

The first class is represented by those who could easily pay *two or three times* two thousand dollars, and who are only concerned in getting a car of reputation, proven merit and refinement.

The Haynes gives to such buyers everything they could expect to get if they were asked to pay an exorbitant price *for the famous Haynes name.*

The other class of buyers are those who *prefer* to pay *less* than two thousand dollars, but who insist upon *economy of operation* and recognize the big saving involved in buying a car built as the Haynes is *known* to be built.

To such buyers the purchase of a Haynes is a hard-headed, long-headed business deal—a purchase for the future as well as for the present.

The Haynes Model 20 for 1911 is a car of beautiful lines, an abundance of power (35-40 H. P.), 114-inch wheel base, and plenty of tonneau room.

The price of $2000 includes *complete* equipment, of the best grade obtainable. For example, a big Type B Prest-o-lite tank is furnished instead of the customary small size, and the famous Warner Auto-Meter is put on *every* car. (Only a speed indicator of this quality is entitled to be used on a Haynes.)

In addition to this Model 20, we will also build for 1911 a limited number of big seven-passenger cars of 50-60 horsepower for those who prefer a car of this size.

Ask for literature regarding these cars before you commit yourself to *any other make.*

The Haynes name and reputation is your best possible safeguard in purchasing a car.

Haynes Automobile Company

Kokomo Station G Indiana

Licensed under Selden Patent

TO DEALERS:—We are in a position to place a few more agencies with the right parties.

You Always Pay *More* Than a Car's Actual Value

EVERY buyer pays the maker the cost of materials and workmanship in the car, and the maker's profit.

All legitimate charges.

Especially profit, which is the maker's wages for his skill in producing from raw materials a finished article of merit.

* * *

¶ But the buyer pays for more things than these.

Increased payment that profits *neither* maker nor buyer.

We refer to "overhead."

* * *

¶ Overhead, a business term, means "non-productive" expense.

Includes the maker's bonded debt, mortgages, rents, racing expenses, losses, waste, and the cost of administration.

* * *

¶ Most overhead never adds an iota of merit to the car; never increases the car buyer's enjoyment.

But the buyer pays for it just the same, whether he knows it or not, and whether he likes it or not.

* * *

¶ Since overhead does not make the car better, but only adds to the buyer's expense, thereby forcing upon him a burden for which he receives no value, the maker's duty should be to keep overhead expense down to absolute minimum.

* * *

¶ That is exactly the Winton Company's policy.

We carry no bonded debt, and no mortgages.

Own our plant and equipment scot free from debt.

Have no water in our stock.

Take the cash discount on our accounts payable.

Waste no money in racing or other unnecessary "stunts."

And manage our entire business with minimum red tape, minimum waste, and absolutely no extravagance.

* * *

¶ That is the sole reason why we can sell you a car of highest grade at a price so extremely low.

In other words, because we believe you should not be required to pay for anything *you do not get*, we keep quality *up* and overhead *down*.

* * *

¶ The car itself, the Winton Six for 1911, proves these facts.

Look it over Observe what it is, and what it can do.

Then compare it, point for point, with other high-grade cars; and satisfy yourself that you save yourself from $1000 to $3000 by purchasing a Winton Six—a car of convincing merit, whose overhead is down to rockbottom.

* * *

¶ We have three books that every car buyer ought to read. These are our 1911 catalog, The Difference Between Price and Value, which tells more facts about overhead, and Twelve Rules to Help Buyers, a guide to safety in buying a car of whatever make, size or price.

Clip the coupon and mail it today.

The Winton Motor Car. Co.
Licensed Under Selden Patent
Cleveland, U. S. A.

BRANCH HOUSES

NEW YORK .....Broadway at 70th St.
CHICAGO.. Michigan Avenue at 13th St
BOSTON .. Berkeley at Stanhope St.
PHILADELPHIA 240-248 No. Broad St
BALTIMORE .. 209 North Liberty St.
CLEVELAND Huron Road at Euclid Ave.
PITTSBURGH.. .. Baum at Beatty St.
DETROIT .. .988 Woodward Ave.
MINNEAPOLIS .. 15-22 Eighth St. N.
SAN FRANCISCO.....360 Van Ness Ave.
SEATTLE .....1000 Pike St.

WINTON SIX

Smooth as velvet six cylinder, 48 H. P. motor. Only motor that CRANKS ITSELF. Ball bearing multiple-disc clutch and four-speed selective transmission. Stromberg carburetor. Bosch magneto. Eyside battery. 124 inch wheel base. Frame narrowed in front to permit short turns. Spacious five-passenger body. Holds the world's lowest upkeep record—77 cents per 1000 miles. Price, $3000.

THE WINTON MOTOR CAR. CO.
417 Berea Road, Cleveland, Ohio
Please send Winton Six literature to

Around the World on $19.25

Write for 1911 Literature

Automobile upkeep—the burden of owning a motor car.

Ask the man who pays the bills.

Or, perhaps you own a car yourself and know from experience that upkeep expense eats up money and takes away much of the happiness of car ownership.

It's a fact.

A fact we don't want you to forget or ignore until you buy a

WINTON SIX

Then you'll know *what a relief* it is to be free from burdensome breaks and bills.

For the Winton Six holds the world's lowest upkeep record—77 cents per 1000 miles.

At which rate you could drive around the world (25,000 miles) on $19.25.

Get our *sworn* records of the individual owners whose cars ran 184,190 miles at the 77 cent upkeep rate.

Then see the 1911 Winton Six and compare this $3000 marvel with cars costing $4000 to $6000, so you can get a real idea of its real worth.

It's a safe, sound, swift, self-cranking, sweet-running, six-cylinder.

THE WINTON MOTOR CAR. CO.
417 Berea Road
Cleveland, O.

Licensed under Selden Patent

POWDER AND DYNAMITE

FG

Fig. 8905A

FFG

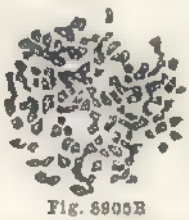


Fig. 8905B

FFFG

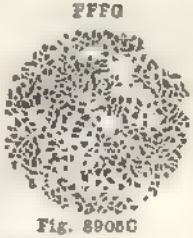


Fig. 8905C

"ORANGE" BLACK POWDER FOR RIFLE AND SHOT GUN

Sizes	FFG
Kegs, 25 pounds	each
Half Kegs, 12½ pounds	"
Quarter Kegs, 6¼ pounds	"

DUPONT SMOKELESS SHOT GUN POWDER

Price, Drums equal in bulk to ½ pound Black Powder	50
" Cannisters equal in bulk to 1 pound Black Powder	1 00

FFF

Fig. 8905D

FF

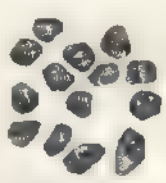


Fig. 8905E

F

Fig. 8905F

Blasting Powder Sizes FFF, FF F, in 25 pound Kegs

DYNAMITE

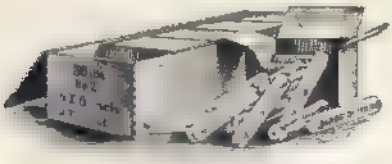


Fig. 8905G

BLASTING STUMPS

Fig. 8905H

AETNA DYNAMITE

Number	1	2xx	2x	2	2B	2C	3x	3
Per cent of Nitroglycerine	60	50	45	40	35	33	30	27

Number 1 is for extremely hard rock, ores, reaking iron and steel, and submar ne blasting. Numbers 2xx and 2x are for hard rock, ores and iron. Numbers 2, 2B, 2C and 3x are for moderately hard rock, copper, lead, and other ores, stumps and ice. Number 3 is for clay, shelly rock frozen earth and light work, and in quarries where rock is to be split but not shattered. Packed in 25 and 50-pound cases. Prices on application.

BLASTING CAPS, FUSES, WIRE, ETC.

DETONATING CAPS

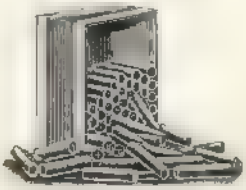


Fig. 8908A

SAFETY FUSE

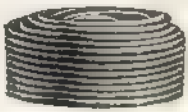


Fig 8908B

GOLD MEDAL DETONATING CAPS

Detonating Caps are packed in tin boxes, containing one hundred caps. Ten boxes in a package.

SAFETY FUSE

Price, Single Tape Fuse, in 50 foot coils, in cases of 6000 feet	per 1000 feet	7.50
" Double " " " " " " " " " " " "	" "	9.00

LEADING WIRE

Fig. 8908C

CONNECTING WIRE

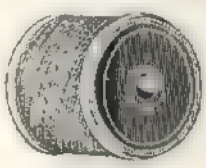


Fig. 8908D

LEADING WIRE

Price, 500 feet in coil	per hundred feet	2.00

Pure Copper, 14 gauge, Insulated. Used in connecting with Blasting Machines and Electrical Exploders.

CONNECTING WIRE

Price on spools of one pound each	per pound	70

Pure Copper 18 gauge, Insulated. Used for connecting the Exploders where several charges are to be fired simultaneously.

ELECTRICAL FUSES

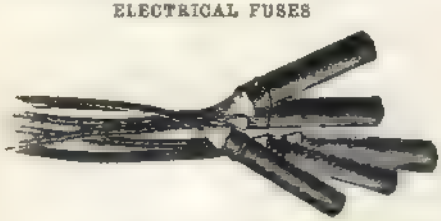


Fig. 8908E

CAP CRIMPER AND FUSE CUTTER

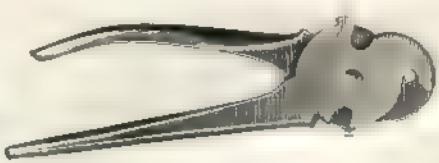


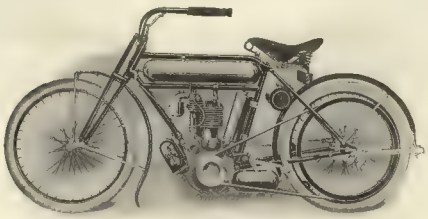
Fig. 8908F

ELECTRICAL FUSES DOUBLE-WOUND INSULATION

Length of wire ..... feet	4	6	8	10	12	14	16
Price, Standard strength, per hundred	3 30	3 54	4 08	4 62	7 16	5 70	6 24
" Double " "	3 75	4 29	4 83	5 37	7 91	6 45	6 99

CAP CRIMPERS AND FUSE CUTTERS

Price	per dozen	1 06



Well, what about the M. M. Now?

We have been telling you that the M. M. was the goods.

Now it has been proven beyond the faintest shadow of a doubt.

The F. A. M. run just finished was the most strenuous run ever held in this country.

130 started——24 finished
3 M. M.'s started——3 M. M.'s finished

Greene, Bowser and Lyons used regular stock machines picked at random from Greene's Chicago stock.

Close for the M. M. Agency at once.
1911 Models ready for Immediate Delivery.

AMERICAN MOTOR CO.

715 Centre Street :: BROCKTON, MASS.

Member of the Motorcycle Manufacturers' Association

DISTRIBUTORS:

W. C. Marsh, 173 Huntington Ave., Boston, Mass.; Geo. P. Jenkins, 10 W. 60th St., N. Y. City; L. E. French, 895 Main St., Buffalo, N. Y.; G. M. Greene, 2127 Michigan Ave., Chicago, Ill.; American Motor Co. of Texas, M. M. Building, Dallas, Texas; Lincoln Holland, 1034 South Main St., Los Angeles, Cal.

There is Pleasure in owning a perfect score Motorcycle

Thor

The Motorcycle Supreme

was the only motorcycle entered to secure a *perfect* score in the F. A. M. National Endurance Run. 125 motorcycles started and *only* 23 finished the strenuous three days' run of 505 miles, through mud and rain, over the worst road conditions imaginable.

Thor Motorcycles are builded for just such service and *Thor* owners get it.

The *Thor* is a dignified and beautiful motorcycle which realizes every expectation aroused by its distinguished position.

We are now making immediate deliveries on 1911 models.

Write for our Descriptive Catalogues.

Live Agents Wanted in Good Territory

Aurora Automatic Machinery Co.
Thor Building :: :: :: Chicago, Illinois

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Needles

Bent Packing Needles.

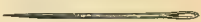
Length, inches	2	3½	4	4½	5	5½	6
Per Gross	$1.00	1.15	1.30	1.65	2.15	2.65	3 00

Straight Packing Needles.

Length, inches.	3½	4	4½	5
Per Gross	$1 15	1 30	1 65	2 15

Speying Needles.

Inches	2½	2¾	3	3½
Per Gross	$0 45	.50	.55	.80



Sail Needles.

Inches	2¼	2½	2¾	3
Per Hundred	$0 40	50	.60	70

Spectacles and Goggles

Spectacle Assortments.

A handsome Glass Show Case, with an assortment of Spectacles and Eyeglasses. The Case is 5 x 6 x 8 inches and contains 3 dozen Glasses which retail from 25 cents to 75 cents a pair. The assortment has been selected with great care by experienced people, who thoroughly understand the needs of the public

The Case is very attractive, and displays the goods to advantage, makes selling easy Test types and instructions for fitting glasses accompany each Case.

Spectacle Assortment. Three dozen Assorted Steel Frame Spectacles and Eye Glasses in Glass Display Case..... Each $16.00

Dust Goggles.

A popular priced protection for the eyes, particularly for bicycle riders, motormen, railroad engineers and firemen, miners, sawmill men, furnace men, foundry and rolling mill men, farmers, drivers, emery wheel grinders, whitewashers, polishers, stone cutters, quarry men and threshers.

Dust Goggles. Clear Flat Glass, Flat Elastic..... Per dozen $1 25
" " Flat Smoke, Blue or Green Glass, Flat Elastic.. . . . 1 50

AMERICAN THOMPSON IMPROVED INDICATOR
(CONTINUED)

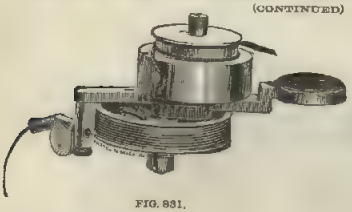


FIG. 831.

AMERICAN IDEAL REDUCING WHEEL.

This is the most popular instrument on the market for reducing the motion of the engine crosshead to that required for paper drum of the indicator. It is furnished with bushings for all strokes from 10 in. to 72 in. When furnished with the indicator, it is packed in box with instrument.

AMERICAN AMSLER'S POLAR PLANIMETER

This instrument should be in the hands of every engineer whose duty it is to measure the area of indicator diagrams. The whole work of measuring a diagram can be done in one minute and the result obtained is more accurate than that of so-called direct reading instruments. It is furnished in a neat mahogany velvet lined case.

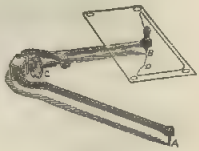


FIG 832

LIST PRICES

American Thompson Improved Indicator (either No. 1 or No. 2 instrument) with one cylinder spring, two single cocks (or one 3 way cock, as preferred), one scale, all necessary wrenches, screw-driver, bottle of watch oil, all enclosed in a neat mahogany box, also copy of Pray's "Twenty Years with the Indicator"	$ 85 00
American Thompson Improved Gas and Oil Engine Indicator, with fixtures as enumerated above	85 00
American Thompson Improved Indicator, with Ideal Reducing Wheel and fixtures as enumerated above	100 00
American Thompson Improved Ammonia Indicator, with fixtures as enumerated above	110 00
American Thompson Improved Indicator with electrical attachment and fixtures as enumerated above	110 00
American Thompson Improved Indicator, with electrical attachment and Ideal Reducing Wheel and fixtures as enumerated above	125 00
Extra Cylinder Springs	5 00
" Pistons	10 00
" Drum Springs	Net 50
" Boxwood Scale, 1 graduation	50
" " " triangular, with 3 graduations	1 00
" Steel " 3 graduations	1 00
" " " 4 graduations	1 25
" Straightway Cocks, for Steam	2 75
" " for Ammonia	7 00
Long-Turn Elbows	1 50
Long-Turn Elbow Cocks	3 00
Three-Way Cock, No. 1, Brass or Nickel-Plated	7 00
" " " No. 2, " " " "	6 00
" " " No. 3, " " " "	5 00
" " " No. 2, Steel	15 00
American Ideal Reducing Wheel	15 00
Pantograph	10 00
Planimeter	15 00
Single Carrying Pulley	60
Double Carrying Pulley	1 20
Metallic Cards, per thousand	Net 5 00
Common Cards "	2 50
Indicator Cord, per bank (21 feet)	15
New Improved Detent Motion	15 00

FAULTLESS REDUCING WHEEL

WITH 8 ALUMINUM BUSHINGS, GIVING 6 CHANGES, FROM 16 TO 60:

LIST PRICE, $18.00

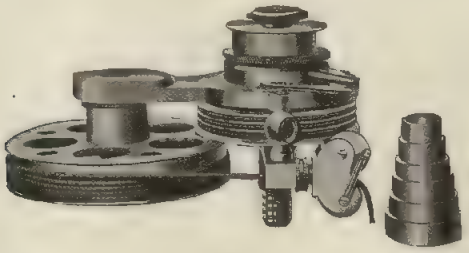


FIG. 833.

Triumph Cord Take-up ..... list price	$6.00
Trill Planimeter ..... " "	18.00
Indicator Cocks, 3-way, Brass ..... " "	6.00
Indicator Cocks, 3-way, Steel ..... " "	10.00
Straightway Cock, Brass ..... " "	3.00
Straightway Cock, Steel ..... " "	5.00

IDEAL REDUCING WHEEL

FOR ENGINE INDICATORS OF ALL STANDARD MAKES

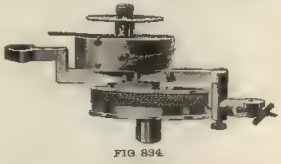


FIG. 834.

The object of the reducing wheel is to reduce accurately the motion of an engine cross-head to that required for a paper drum of an indicator, and to give the required length of diagram, regardless of the engine stroke. If either the indicator or reducing motion are not correct, the cards are useless and deceptive, hence the first step towards obtaining the true state of affairs in a steam cylinder is an indicator that will show the pressure, either steam or vacuum, and a correct reducing motion by which diagrams can be taken, so that an intelligent engineer can interpret them, adjust the valves and figure the power developed. This feature is fully accomplished with the Bachelder Indicator and Ideal Reducing Wheel.

Price, Nickel Plated $15.00

THE BOOTH DEMOUNTABLE RIM

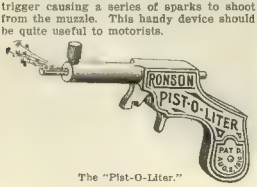
The Booth Demountable Rim, made by the Booth Demountable Rim Co., of Cleveland, Ohio, includes a rim fitted to each wheel, and an extra rim equipped for an inflated tire. Thus, if overtaken by tire trouble on the road, the damaged tire and rim may be replaced by the inflated tire and

The "Booth" Demountable Rim—Fig. 1 shows section of New Universal Rim used as standard; Fig. 2 shows locking device.

rim. The tire rim will take any size tire, and in the channel rim are three sets of gears as shown in Fig. 2, and 6 stamped steel taper webs, two at each locking device, of the same pitch as those on the tire rim. To detach a tire, the worm screw in Fig. 2 is given three turns to the left with a brace (the only tool necessary) forcing rim and tire off, putting a new rim and tire on, three turns to the right locks it in place. The device may be attached to any style rim, without marring the felloe.

THE RONSON "PIST-O-LITER"

The Ronson Specialty Co., of Newark, N. J., is putting on the market a new lighter for gas in the form of a pistol, a pull on the trigger causing a series of sparks to shoot from the muzzle. This handy device should be quite useful to motorists.



The "Pist-O-Liter."

THE "HORSESHOE" AUTO TIRE

The Racine Auto Tire Co., of Racine, Wis., is making a new tire with leather tread This tire is constructed of four thicknesses of chrome tanned leather, a leather which which will not harden from continual wetting. Beneath this, as seen in the illustration, are four thicknesses of Sea Island cot-

The "Horseshoe" Auto Tire. 1. the horseshoe studs; 2. the rivets; 3. the fourth layer of leather; 4. four thicknesses of sea island cotton

ton, all layers of leather and cotton being vulcanized together. Rivets extending through three layers of leather have on their heads separate metal horseshoes, sixteen of which are in contact with the ground beneath the tire, forming a most effective anti-skid device, and also, by their heat radiating power, keeping the tire cool. The combination of leather and metal makes a tire which is claimed to be puncture proof and not to blow out.

NORRIS AUTOMOBILE TOPS

The illustrated tops for runabouts and touring cars are made by R. Milton Norris, 516 West Baltimore street, Baltimore, Md., with the best make of bow sockets, second

Four-Bow Extension Touring Car Top.

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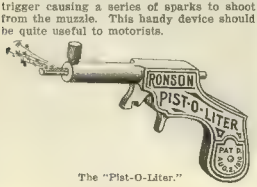

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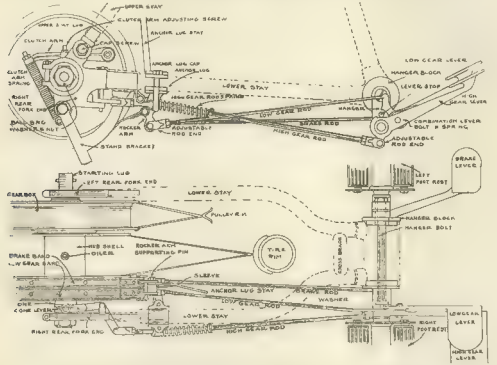
THE "K. & R." TWO SPEED AND FREE ENGINE CONVERSION SET

The Keller & Risque Motor Co., of St. Paul, Minn., have made several improvements in their two speed and free engine conversion set for motorcycles which we described in our January, 1909, issue, page 307. The chief improvement is the new clutch arm spring and cone used to operate the high gear instead of an outside contracting band. Also, the set has been adapted so that it may be attached to any machine without changing the rear fork ends, and it comprises a complete new rear hub laced up to road and pulley wheels, hangers, foot levers, rods, brakes and connections. Pedals are dispensed with, foot rests being supplied instead. The machine is cranked from the left side by means of a handle engaging a lug on the rear axle, the axle being turned backward, turning the engine, through the gears, forward, the high gear lever being down as far as it will go and locked by the heel of the low gear lever, the high gear rod through the cone lever throwing in a cone on the axle raising the clutch arm which through a spreader key relieves the internal expanding clutch, allowing the pulley wheel to revolve free of the main hub, giving a free engine. Low gear is obtained by pressing the low gear lever down, contracting the band brake on the axle flange, holding the axle stationary and causing the road wheel to revolve half as fast as the pulley wheel. High gear is obtained by releasing the low gear lever, the high gear lever being forced up by the spring on its rod, withdrawing the cone and allowing the drum spring to pull down the clutch arm which turns the spreader key, expanding the clutch band inside the main hub shell, locking the pulley wheel (through the gears) absolutely tight to the road wheel so that all parts revolve together. Both gear levers are on the right side, while the brake lever is on the left, all convenient to the foot rest.



Plan and elevation—the "K & R" conversion set for motorcycles

Harry McDougall, of Newark, N. J., has just completed a special motorcycle after his own designs. It is a low, short wheel base machine, designed especially for fast track work on short tracks with sharp turns.

AMERICAN MOTORCYCLE BELTS

The American Belting and Tanning Co., of Boston, Mass., makes a special motorcycle belt. It is a flat belt of special tanned leather, three ply, and is thoroughly waterproof. The manufacturers state that they have never had a belt which did not last a whole season.

The Star Electric Company, of Chicago, Ill., has just brought out a new luggage carrier, made of steel. It is made from flat stock, the frame being 12 inches wide and 13 inches long, the carrying capacity being 175 pounds. The carrier weighs about four pounds ready for attachment, six leather straps being provided for the luggage. The device can be applied to any of the standard machines

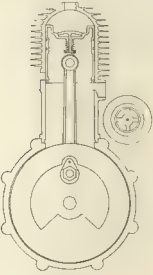
DISCUSSION AND CRITICISM OF SIGG TWO CYCLE MOTOR

[696.] I have inclosed a drawing of a 2 cycle motorcycle engine, which I would be pleased to have criticised for me.

Bore 3¼ in., stroke 3 11-16 in., balance wheels 8 in. diameter by 1¼ in. thick, weight 31 pounds, connecting rod 7 ⅜ in., length c-c.

I have designed my valve. 1. 1½ in. diameter at bottom, but would like to use a slightly smaller one if possible to give the top of the piston more cooling space (marked on drawings with cross). 2. Is my valve properly designed? 3. Is ¼ in. lift too much?

The exhaust port is to extend around three sides of the cylinder to be ⅛ in. high and to have 1⅝ sq. in. in area.



Sigg design for 2 cycle motor with piston head intake.

Intake port will be ⅛ in. high by 2 in. long. 4. What size exhaust pipe shall I use? 5. Will a ¾ in. carburetor be large enough? 6. Cylinder to be of steel. Should piston be of the same material? 7. I believe my cylinder walls could be 3-16 in. instead of ¼ in. thick. 8. Will my piston be strong enough as designed? 9. Could piston be made in two parts to allow inserting perforated steel plate and screen to prevent base explosions. 10. Piston rings to be ⅛ in. or 3-16 in. wide. 11. Will compression space be all right? 12. Are flanges on cylinder all right? 13. How would you advise starting, by crank or pedal? 14. Would it not be better practice to place spark plug on the side of the cylinder instead of center with this design piston? 15. About how fast can I reasonably expect this motor to turn up? 16. Will it be fast enough for the work it is designed for? 17. About what horse power can I expect it to develop? 18. Do you think that the cylinder and piston will cool properly? 19. If a 2 cycle motor air cools easier than a four cycle, why do most of the experiments on 2 cycle air cooled motors fall through? I noticed in one of your editions that Duryea spine cools this motor. 20. Must we judge by this that the only successful way to cool a 2 cycle air cooled engine is to use a good heat conducting metal for spines or flanges?

TOLEDO, O. HENRY SIGG.

Your valve port area is very small as you have shown it, and should be greater rather than less. Increasing the valve diameter will not, in my opinion, reduce the piston cooling effect due to charge passage through the valve. 2. Raise the "crown" of your valve so as to make its shape stronger, try it of tool steel for strength, 1-16 only in web thickness, with ⅛ closing face as you have it. Make your valve seat ribs light, say ⅛ wide only and tie your piston head together with side ribs disposed in a square to get piston head strength. Your valve and piston will give you no trouble from heating. This form of piston head and valve are said by those who have tried it, to stay reasonably cool. I have never seen a motor of this type at work. 3. I believe the ¼ lift will do well.

As the charge must go up through the middle of the exhaust the exhaust ports should be symmetrically disposed on the two sides of a piston diameter; not, in my opinion, as you describe "on 3 sides" of the cylinder. 4. Anything over ¾ in. 5. Should say yes. 6. Make your piston and cylinder both of gray iron; do not worry with a steel cylinder. 7. If you make a steel cylinder ⅛ wall thickness is enough, and 3-16 wall is thick enough for gray iron. 8. No. You must tie the cylindrical piston shell more strongly across the head. 9. No. Use piston as you show it. You will not have crank box explosions, in my opinion, if you have 5 or 6 pounds compression, your valve cannot lift until after the exhaust has extinguished the flame in the cylinder. 10. Usual practice. 11. Your drawings do not show your crank case compression space volume, you probably will have to fill your piston all you can to get even 4 pounds compression. 12. Ordinary practice, or nearly so. 13. Pedal start preferred. 14. Spark plug better in middle, in my opinion. 15. 1,800 to 2,000, perhaps more. 16. Yes. 17. I think so, but I may be wrong. 18. Because they are built by poor designers.

Knox used spine cooling since 1900.

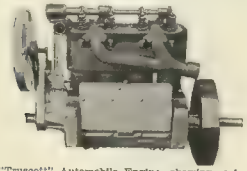
The radiating surfaces should be integral with the cylinder walls, for best results not driven in or screwed in. Heat will not readily pass a joint in the conductor.

A great many 4 cycle motors have been successfully air cooled.

I do not think ¾ dia. is enough for the crank shaft, though the motorcycle motors do good work with very small diameter crank shafts.—H. D.

THE "TRUSCOTT" ENGINE

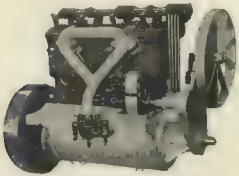
The Truscott Boat Mfg. Co., of St. Joseph, Mich., is making a new automobile engine, pictured herewith. Special stress is laid by the manufacturers upon the few number of parts and their accessibility. The engine has a two gallon self feeding oiler which is a one piece aluminum casting, serving as a crank case plate. The magneto



"Truscott" Automobile Engine—showing carburetor, magneto, timer, etc.

and timer gears, together with the cam shaft, are all carried in the front housing and oiled from the crank case. The valve construction is claimed to be exceptionally compact and accessible.

Four cams only occupy a space of 2 inches in length on the cam shaft. The valve lifters are hardened steel and accurately ground and supported in a bronze housing, which is bolted to the crank case end. The overhead valve mechanism is telescope construction, fully mounted on roller bearings and is associated with the valve lifters by four perpendicular rods through which it is actuated.



"Truscott" Automobile Engine—exhaust side.

The cylinders are offset by 4¼ inch bore, 5 inch stroke, delivering from 30 to 35 H. P. and are cast en bloc. Because of the novel valve construction, aside from the disconnecting of the exhaust pipe, the cylinder casting may be removed in less than ten minutes.

The pistons are extremely long, with four rings above the piston pin, which is hollow, with a diameter of 1⅛ inches, and oil grooves below the pin. The long connecting rods are of marine type. The crank pin bearing is 1⅝ by 2¼ inches. The valves are in the head, diameter 1⅞ inches, made of nickel steel, ground. The drop forged heat tried crank has a forward bearing 6 inches long, diameter 1¾ inch, center bearing 2½ inches long, diameter 1⅝ inch, rear or fly wheel bearing 4 inches long, 2 inch diameter. The fly wheel has an extreme diameter of 17 inches and can be adapted to any clutch system.

The thermo-syphon cooling system has 2 inch water connections; the cooling fan has a diameter of 16 inches, driven from 4 inch pulleys with ¾ inch belt on ball bearings.

The crank shaft bearings are oiled from the crank case, which is divided into three compartments, the center one of which is fed from the oil tank, which is bolted to the crank case, and which, when removed, leaves an opening 6 x 16 inches, making the adjustment of bearings easy. The oil reaches the end compartments from the center through a cored passage at the bottom of the crank case which ends in a boss in each of the end compartment which are faced to the oil level necessary for proper lubrication.

The dimensions of the engine are: width from center to center of bolt holes in supporting arms, minimum, 18 inches; length from center to center of bolt holes in supporting arms 20½ inches; distance from under side of supporting arm to bottom of crank case, 8¾ inches; length from under side of supporting arm to extreme top 20½ inches; length over all from outside edge of fly wheel to outside edge of fan, 36 inches.

1911 FEATURES OF "PERFEX" IGNITION

"Perfex" ignition for 1911 incorporates a number of unique and attractive features. Although it is high-tension jump-spark ignition, there is no secondary wiring in the en-

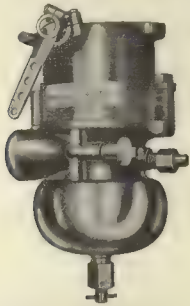
"Perfex" Ignitor.

tire system, because the induction coil is "direct-connected" with the spark plug. The induction coil is protected by a special heat, water and breakage-proof casing, into which

THE STEWART "PRECISION" CARBURETOR

The Stewart Precision Carburetor, manufactured by the Alfred C. Stewart Machine Works, Los Angeles, Cal., is being pushed to the front on the basis of absolute consistency and uniformity of operation under any and all conditions. The Stewart carburetor, which has been on the market for a comparatively short time, is based upon a new principle which ensures these important essentials, and which has been thoroughly tested and firmly established.

Proportioning of air and gasoline is accomplished by means of gravity acting on the one moving part, there being no springs to get out of order or supply erratic, uneven



The Stewart "Precision" Carburetor

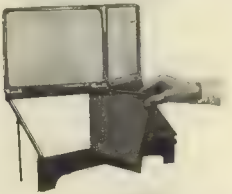
service. No variation in the gasoline level can change the regulation of the mixture. The uniformly true proportioning and perfect atomising of the mixture enables the engine to pull strongly and smoothly. The vacuum is practically the same at all speeds, being due only to the weight of the spraying valve, which is a constant quantity.

It is obvious that under such conditions the engine will supply the maximum speed under difficult conditions, and it is claimed that this carburetor has never failed to show greater speed than competing makes. The same conditions also make for the greatest economy in consumption of gasoline.

It is a well known fact that the ordinary carburetor is more or less affected by altitude, making consistent engine performance impossible at mountain-high altitudes. The principle upon which the Stewart carburetor is operated makes it impossible for it to be affected beyond the minimum. Trips to 7000 feet have been made without adjustment being necessary. As perfect uniformity and consistency of performance is essential on the often dangerous mountain roads, the importance of this feature in the Stewart, can scarcely be underestimated. The Stewart Company is in receipt of letters from automobile users, who have tried out the carburetor at great altitudes, with most satisfactory results.

THE "ARROW" WIND SHIELD

The Arrow Wind Shield Co., of Cleveland Ohio, makes the "Arrow" Wind Shield, pictured herewith, the features of which are the division of the glass into two plates placed at an angle to each other, and a lower curtain which may be removed to afford a breeze through the car without it striking the operator's face. The shield has



The "Arrow" Windshield.

been constructed with the view of being as light as possible, consistent with strength and to offer as little resistance to the air as possible. The upper glass portion is hinged and may be quickly lowered if desired. It is constructed of ribbed metal sections, cast in one piece, and has no joints to rattle. The glass is set in rubber cushions. The shield in polished brass, sells for $20.

A NEW AUTOMOBILE SNIP

The National Cutlery Co., of Philadelphia Pa., has gotten out a new tool for automobilists, their No. 45 Snip. It is 7 inches long, made of drop forgings of a high grade of cutlery steel, highly polished and full nickel plated. It will cut leather, light metal, wire, rubber, tape, or packing, and should be a valuable addition to a car's equipment. It sells for $1.50.

National Cutlery Co.'s Automobile Snip.

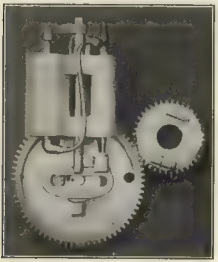
"TINOL"

Heas & Son, of Philadelphia, Pa., are putting on the market a new soldering outfit consisting of a special soldering paste, "Tinol," and a compact "Tinol Torch," which latter is illustrated herewith. "Tinol" is an alloy of tin and lead, finely granulated, mixed with an oily, non-acid flux to the consistency of a soft paste. To use a thin coating of paste is applied to the surface of the surfaces to be soldered, and heated. No rosin, acid or other flux is required. Tinol is also made in hollow rods and wires. The Tinol Torch burns alcohol, has a self-acting blow pipe flame about 3½ inches long, giving intense heat. It holds enough alcohol to burn two hours, and yet is very compact. It sells for 50 cents. Tinol sells for 50 cents a can.

The "Tinol" Torch.

BASTIAN TIRE PUMPS

The Olney Automobile Co., of Philadelphia, Pa., is making two new tire pumps, illustrated herewith. The Bastian Compound Tire Pump can be applied to any automobile which has a shaft 1½ inches or longer between the engine and transmission, on which can be clamped a split gear for driving the pump, which is placed under the floor board and can be connected by a lever from the side of the car without lifting the floor board. The pump is slow running, geared to one half the engine speed, and is in motion only when in use. There are two cylinders, one 1¾ inches, other 1 inch in diameter, the air being compressed in the larger cylinder, and then passing to the smaller.



The "Bastian" Compound Tire Pump.

The "Bastian" two cylinder friction tire pump.

The Friction Tire Pump is designed to be run by friction against the fly wheel, under the floor board, and can also be geared to the pump shaft under the hood. For $3.50 extra a pressure gauge is furnished. Both pumps sell for $25.

EAMES WRENCHES

The Eames Tool Co., of Lynn, Mass., has a spark plug wrench which is new this season and is an exceedingly useful tool. It is made of best grade material throughout and is amply strong for the hardest service. When not in use the handle fits into the inside of the wrench where it is automatically held so it cannot fall out thus making the wrench very easy to stow away in the tool kit. It is made in ⅞ in., 1 in., and 1⅛ in. sizes.

Eames Spark Plug Wrench.

The company has also recently added a ratchet attachment to their socket wrenches intended for use on nuts in especially inaccessible positions. It is reversible and is used by interposing it between the regular handle of the set and the socket, as shown in the illustration. The ratchet attachment used in conjunction with the swivel joint of the handle serves as a universal joint, thus obviating the necessity of a separate fixture for that purpose. The attachment is now included in the regular set of wrenches.

SEE

The

Artizan

Engine Driven Tire Pump

TRADE ABC MARK

A NECESSITY
for every motor car.

Will Pump from 0 to 500 Pounds (if necessary)

WEIGHT—ONLY 6 POUNDS
LENGTH—ONLY 10 INCHES

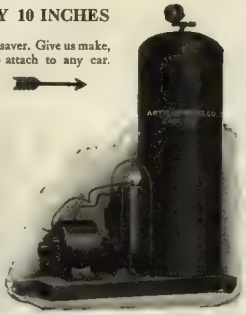
Write for particulars and prices of this trouble saver. Give us make, model and year and we will tell you how to attach to any car.

FOR YOUR GARAGE

Private or Public

The ARTIZAN
Automatic Air Supply System
SAVES Labor, Time and Tires.

ALWAYS READY
Let us tell you about it.



ARTIZAN BRASS COMPANY
872 Lincoln Parkway, Chicago, Ill.
B. M. ASCH, Eastern Distributor
1779 Broadway New York

Group of Atterbury Motor Trucks.

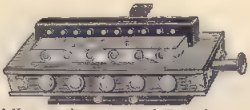
The machines here shown are the product of the Atterbury Motor Car Co., Buffalo, N. Y., and are as follows. Upper left, Model L-30, 1 ton capacity, 4 cylinders, 4¼ by 4½, 30 H. P. at 1000 R. P. M., $2500 with standard body. Lower left, Model N 40, 2 ton truck, 4 cylinders 4¼ by 5½, 40 H. P. at 1000 R. P. M., $3000 with standard body. Upper right, Model K-20, 1500 pounds delivery truck, 4 cylinders, 22 H. P. at 1200 R. P. M., 3¼ by 4½, with standard body, $1600. Lower right, Model N-50, 3 ton truck, chassis, $3250 with platform body, $3500. Motor four cylinders, 4⅞ by 5½, 50 H. P. at 1000 R. P. M. This company also manufactures a 5 ton truck with 6 cylinder motor of 4¼ by 5½, at $4250 for the chassis. All types of bodies can be supplied

FLUTE OR BLOW ACCORDEONS

No. 9325 10 Bone Keys, wood case, projecting bell.....Each $2.25

No. 9327 10 Metal Keys, two spoon shaped bass keys, cherry shade wood case, nickel band trimmings .....Each $3.10

No. 9349 10 One Piece Metal Keys, two spoon pattern bass keys, dark orange case with beveled corners, elaborately colored, metal ornamentation, case in two parts with hinges and clasp fasteners to permit opening readily for repairs, etc., carefully tuned, latest style.....Each $3 70



No. 9320 10 Keys, wooden case, nickel trimmed.....Each $2.25

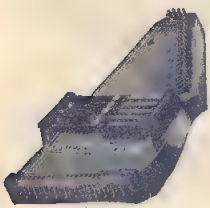
No. 9345 THE CLARIOPHONE 10 bone keys, cylindrical wood body, fancy metal ornaments, with cord.....Each $2.90

No. 9228 10 One Piece Metal Keys, two spoon shaped bass keys, ebonized case with nickeled ornaments and trimmings .....Each $3 20

We purchase musical goods in so large quantities that we are able to offer you so exceedingly low prices.

AUTOHARPS

Simple to learn. Children exercise considerable energy as progress is rapid. Music sweet and melodious. No home should be without one.



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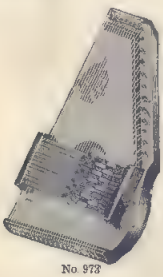

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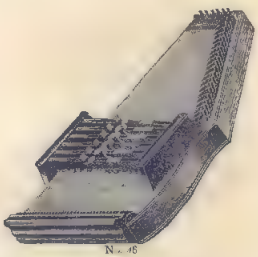

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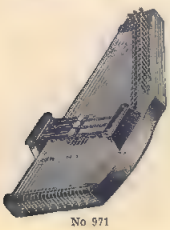


No. 971

No. 971 20 Strings, 3 bars, producing 3 chords, C and F major and G seventh, ebony finish... Each $6.00

No. 92¾ The Favorite, 22 strings, 5 bars, producing 5 chords, C, F and B♭ major, C and G seventh, ebony finish, neatly decorated.....Each 8.50

No. 972½ 32 Strings, 8 bars, producing 8 chords, C, F and B♭ major C, G and E seventh, D and A minor, ebony finish, neatly decorated.....Each 14.00

No. 973 37 Strings, 12 bars, producing 12 chords, G, C, F and B♭ major, G, C, D, E and A seventh, A, D and G minor, ebony finish, neatly decorated .....Each 18.00

No. 96 32 Strings, 6 bars, producing 16 chords, A, C, F, B♭, and G and D major, D, G, C and A seventh, E, D, G, B and A minor C diminished seventh, finished in natural spruce top, ebony veneer sides, white holly bound edges, highly polished. In wood case ..... Each 37 25

NOTE.—Above are Fitted with Tuning Hammer, 2 Picks, Music Rack and Instruction Book, Complete. Lists of Music Furnished upon Application.

CONCERTINAS

No. 9480

No. 9876

SINGLE SET REEDS.

No. 9824 20 Keys, polished oak tops, with sound rings and nickel ornaments ..... Each $ 5.65
No. 9870 20 Keys, nickel tops, corners, and clasps, double bellows ..... Each 6 40
No. 9194 20 Keys, mahogany tops, carved mouldings, leather bellows ..... Each 11.70

DOUBLE SET REEDS.

No. 9480 20 Keys, mahogany tops, with German silver edge and inlaying, sound rings, double bellows..... Each $ 7.10
No. 9878 20 Keys, nickel tops and sound rings, nickel corners and clasps, double bellows..... Each 7.40
No. 9876 20 Keys, nickel tops, bound with gilt ornamentations and sound rings, nickel corners and clasps, double bellows ..... Each 7.99
No. 9872 20 Keys, polished tops, bound with gilt ornamentations, nickel corners and clasps, double bellows.... Each 7.75

No. 9874

No. 94, English

No 9874 20 Keys, nickel tops, corners, and clasps, heavy bellows, frames with nickel protectors..... Each $ 8.75
No. 9808 20 Keys, rosewood tops, figured moulding, bone keys ..... Each 10 60

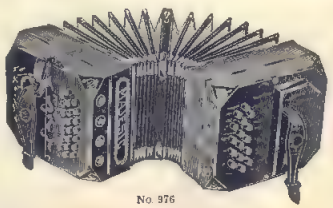
GENUINE ENGLISH, LACHENAL & CO., LONDON, MAKERS.

Double Action, With Screwed Notes. Compass 3½ Octaves, From G Below to Second C Above.

No. 91 48 Keys, mahogany, leather bellows, 4 folds, in wood case ..... Each $44.40
No. 94 48 Keys, rosewood, Morocco bellows, 5 folds, bushed key holes, in fine rosewood case..... Each 32.40
No. 910 Anglo-German pattern, 20 keys, mahogany, leather bellows, 5 folds, in wood case..... Each 23.10
No. 911 Anglo-German pattern, 20 keys, mahogany, steel reeds, leather bellows, 5 folds, in wood case..... Each 28 40

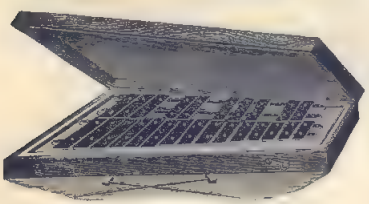
GERMAN CONCERTINAS. SQUARE FORM. MAJESTIC BRAND.

No. 974 Rosewood Veneered Case, with German silver edges, 3 rows of German silver keys on each side, double bellows, single reeds, 76 notes, 38 keys, composition bronze reeds Size 7½x6½ inches..... Each $39 75
No. 975 Rosewood Veneered Case, with German silver edges, 3 rows German silver keys on each side, double bellows, single reeds, 76 notes, 38 keys, steel reeds. Size 7½x7 inches ..... Each 50 40
No. 976 Rosewood Veneered Case, with German silver edges and ornamented moulding, cut off corners inlaid with German silver ornamentation, double leather covered bellows, with German silver corners and bellows protectors, 3 rows of pearl keys on each side, 76 notes, 38 keys, 152 steel reeds, tuned in octave or double tuning Size 8x7¼ inches ..... Each 122.10



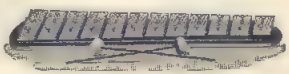
No 976

ORCHESTRA BELLS. LOW PITCH AND HIGH PITCH.



L. Pitch H Pitch
No. No.
95 94 F to F, 2 octaves, chromatic, 25 steel bars, ⅛ inch thick, ⅞ inch wide, in a wood case, 19x13½ inches, covered with black canvas, leather handle and metal corners and trimmings $19.20
95 93 F to F, 2 octaves, chromatic, 25 steel polished bars, 5-32 inch thick, 1 inch wide, in solid oak case, 19x13½ inches, strong brass handle and trimmings..... 30.00

PARLOR BELLS. LOW AND HIGH PITCH.



L. Pitch H Pitch
No. No. Per Set
9101 911 12 Blued Steel Bars, on frame, key of A..... $4.20
9102 912 12 Blued Steel Bars, on frame, key of Ab..... 4.20
9103 913 12 Blued Steel Bars, on frame, key of C 4 20
9104 914 20 Blued Steel Bars, on frame, chromatic.... 8.35

OUR GOODS ARE RIGHT, OUR PRICES, ARE RIGHT AND WE WILL TREAT YOU RIGHT. TELL US WHEN WE ARE WRONG.

Chalmers Glidden Tour Winner Used a Bosch Magneto

This hardest of all Gliddens showed up the strength or weakness of every part of each car, and it demonstrated that the high-grade car equipped with the Bosch Magneto had ignition efficiency, power and endurance.

Cobe Trophy Won by the Bosch Equipped Marmon

This most important race of the Middle West won by Dawson driving Marmon car 31, with Harroun in 30 Marmon third and Harry Grant in Alco fourth. All Bosch equipped.

A strenuous swift 200-mile speed and endurance test won in 1:63:20.14.

Bosch Magneto Company

223-225 West 46th Street, New York

Chicago Branch: 1253 Michigan Avenue; San Francisco Branch: 357 Van Ness Avenue; Detroit Branch: 878 Woodward Avenue

POWER WHEN YOU NEED IT

is combined with economy and flexibility in the

POSITIVE AUTOMATIC

CARBURETTOR

G. & A.

Money refunded if not satisfactory after 30-day trial.

A. J. MYERS, Inc.

Sole Owners U. S. Patent Rights

244 W. 49th STREET, NEW YORK

All persons are cautioned against infringing on the ball cage for the intake of auxiliary air.

WILL YOU INVEST $3. IN A GYREX · THE MIXER ·

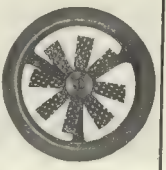
To Save Over 25 Per Cent. Gasolene?

Proof that the GYREX Saved Over 31 per cent.

A Taxi-Motor Cab (Boston) covered 1306 miles on 95½ gallons of gasolene WITHOUT A GYREX MIXER—average of 13.67 miles per gallon.

A Taxi-Motor Cab (Boston) WITH A GYREX MIXER covered 1346 miles on 74½ gallons—average 18.06 miles per gallon, a GAIN OF ALMOST 32%.

Above statement made by Taxi-Motor Cab Co., Boston. Copy of letter sent on request. We have always claimed that GYREX saves 20 to 25% of gasolene - these figures prove we are conservative. Can you afford to be without a GYREX? Pays for itself in no time.

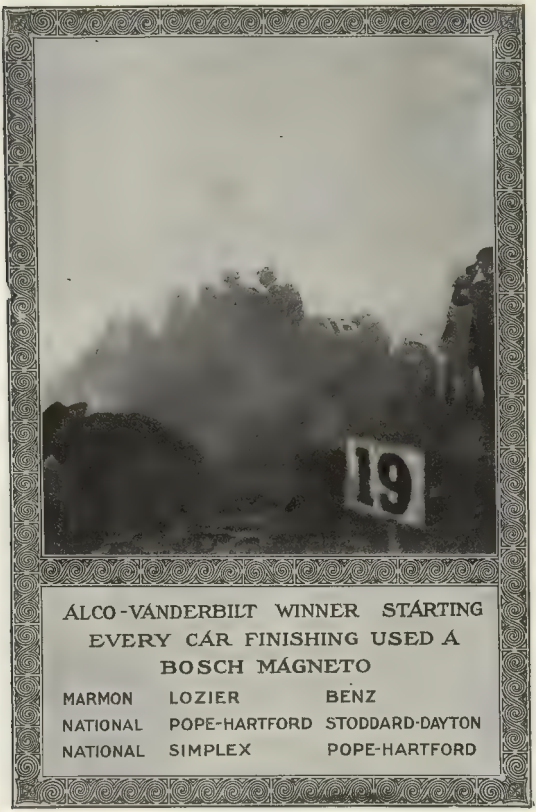


FREE TRIAL OFFER

Send $3.00 and we mail a Gyrex with the understanding that if it does not prove its worth you can return it within 10 days, and your money is cheerfully refunded. Send name, model and year of car or inside diameter of intake pipe at carbureter flange.

Gyrex Manufacturing Company, 1776 Broadway, N. Y.

Philadelphia: Garrett A. Vallee & Co., 1121 Land Title Building



ALCO-VANDERBILT WINNER STARTING
EVERY CAR FINISHING USED A
BOSCH MAGNETO

MARMON	LOZIER	BENZ
NATIONAL	POPE-HARTFORD	STODDARD-DAYTON
NATIONAL	SIMPLEX	POPE-HARTFORD

THE BACHELDER PATENT ADJUSTABLE SPRING INDICATOR

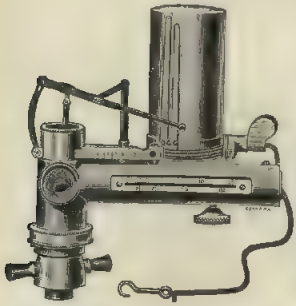


FIG. 826.

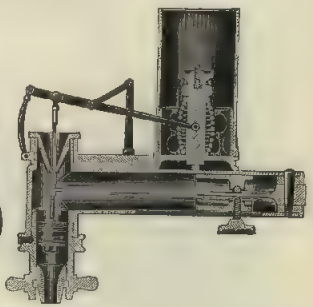


FIG. 827.

If you want an indicator for all classes of work, anything and everything, at any speed or pressure, without a box full of springs, the "Bachelder" is the instrument, it requires no extras. To do the same work with any other indicator would require thirteen spiral springs, not to speak of the cost or trouble of changing.

List price.....each, $90.00

THE BUSHNELL IMPROVED BACHELDER INDICATOR

WITH STEAM-JACKETED, AIR-JACKETED CYLINDER FOR HIGH PRESSURE OR SUPERHEATED STEAM, GAS AND AMMONIA

The engraving shows the indicator complete with broken section illustrating the position of the cylinder as in use. Particular attention is called to the facility with which the cylinders can be removed and others of different areas or compositions inserted, thus not only covering a wide range of pressures, but making them suitable for ammonia also. Again, if through any cause the cylinder becomes cut or injured, a new one can be obtained and put in by the owner of the instrument at a very slight cost, without the loss of time and expense of sending the instrument to the manufacturer to have new piston fitted.

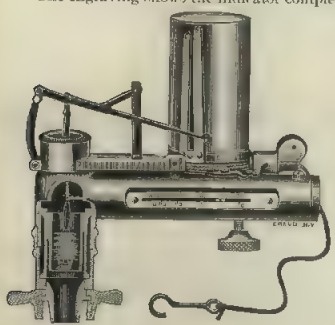


FIG 828

For ammonia use the body and cylinder of this Indicator are made of de-oxidized bronze, while the piston is made of steel. This combination works perfectly together, and will successfully withstand the action of ammonia.

List price.....each, $100.00

AMERICAN THOMPSON IMPROVED INDICATOR

Latest Design with New Improved Detent Motion

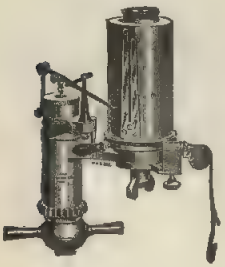


FIG. 829.

ORIGINAL THOMPSON INDICATOR

Sectional View Gas Engine Indicator ¼ inch area piston

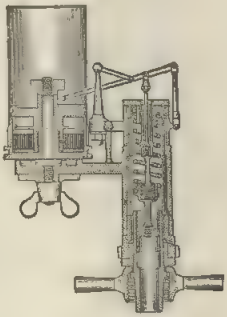


FIG. 830.

THE FEATURES

PARALLEL MOTION. This vital part of the indicator is more accurate on the American Thompson Improved Indicator than on any other style now on the market and errors said to exist in drawing correct vertical lines do not appear in the limited movement of the pencil on this instrument. The parallel movement of the pencil is secured by a link attached to and governing the lever direct. The pivots of this link are made free from any appreciable lost motion and will remain so indefinitely, however, should any such lost motion exist, it will affect the integrity of the parallel movement only to an extent equal to it *not three or four times that amount.* The force required to guide the lever in its parallel movement is received on the pivots of the link alone where the friction it causes is practically inappreciable. This cannot be so when the slot and roller device is used as a guiding force.

PAPER CYLINDER MOVEMENT. This is so constructed that the tension of the coiled drum spring within the paper cylinder can be increased or decreased for different speed engines, thereby providing for fine adjustments.

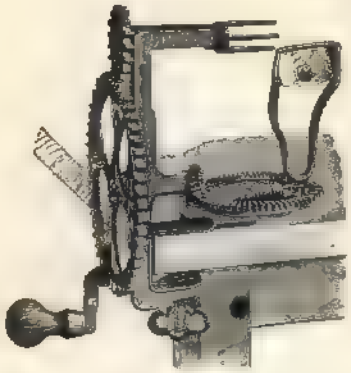
LEADING PULLEY FOR PAPER CYLINDER. This pulley works in a sleeve which rotates in the stand according to the adjustments required and is held in position by a milled head thumb screw. By this pulley the cord may be carried to any desired angle without any possibility of interfering with the motion or of undue friction.

FOR GAS ENGINE WORK. This instrument is in extensive use on gas engine work and its record is remarkable. When so used, the indicator is fitted with a 1/2 inch paper drum and ¼ inch or ⅜ inch area piston according to the work in hand. The working parts are made as light as possible to withstand the severe strain to which the instrument is subjected. It is now only used on 250 R P M and has been used with good results on 1150 R P M. This instrument is also furnished of steel for work on ammonia, for hydraulic pressures and to meet U. S. Navy requirements.

NEW IMPROVED DETENT MOTION. This device, which is made a part of the indicator itself, as shown in cut at top of page does away entirely with the necessity of stopping the engine or unhooking the cord from the crosshead to change cards. After taking one diagram, the lever at drum base is pushed forward when the drum itself releases, the base continuing to revolve so that there is no slack cord at any time. When placing a new card on the drum, turn the drum forward by the milled rim at top until it engages the drum base when it continues to revolve as before and is ready for another card to be taken. An extra charge is made for this attachment.

SEE NEXT PAGE FOR LIST PRICES

APPLE PARERS

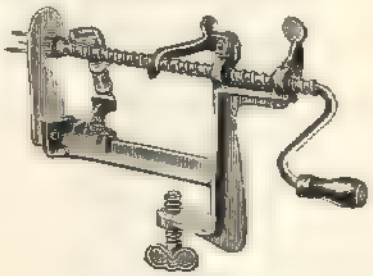


NO. 72, WITHOUT PUSH-OFF

This Parer has been in use for many years, has given satisfaction, and performs its work in a thorough manner.

No. 72 ..... Per dozen $6.50

One dozen in a Case.

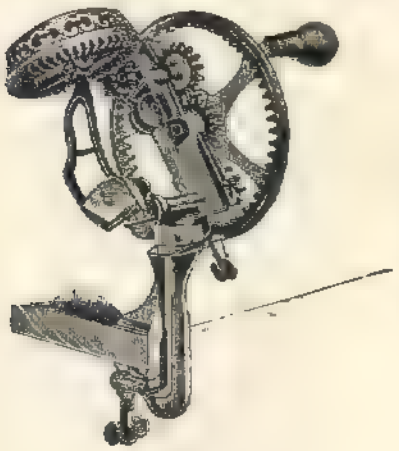


"DAISY"

Parer, Corer and Slicer Combined, with Push-Off. Will operate successfully on Large or Soft Fruit.

"Daisy" ..... Per dozen $8.50

One dozen in a Case.



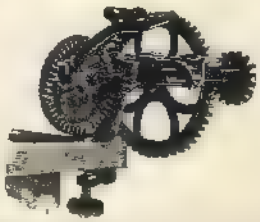
NO. 78

NO. 78, APPLE PARERS

With Automatic Push-Off and Improved Curved Knife. Every Machine works perfectly, all parts being accurately fitted and put together in the best possible manner.

No. 78 ..... Per dozen $12.50

One-twelfth dozen in a Box; one dozen in a Case.

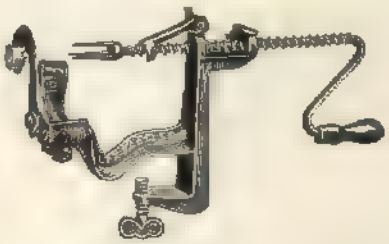


"BALDWIN" WITH AUTOMATIC PUSH-OFF

Will Pare Apples of any size or shape and remove them from the Fork automatically.

"Baldwin" ..... Per dozen $8.00

One dozen in a Case.



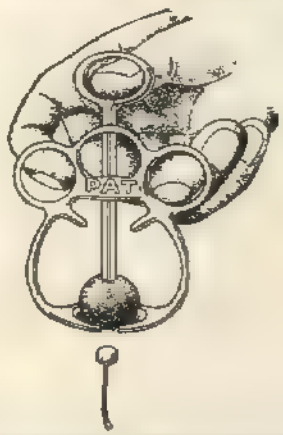
"LITTLE STAR"

Parer, Corer and Slicer Combined, with Push-Off, Simplest Machine in use.

"Little Star" ..... Per dozen $10.00

One dozen in a Case.

CHERRY STONERS



"PERFECTION" CHERRY STONER

Practical, Simple and Efficient.
Capacity, 15 to 20 Quarts an hour.
Does not crush the fruit or soil the hands.

"Perfection" ..... Per hundred $15.00

Twenty-five in a Box.

CORK SCREWS

COMBINATION CORK EXTRACTORS, CROWN OPENERS, SEAL LIFTERS AND WIRE BREAKERS

NO. 6152
Norway Steel, Nickel Plated, Maple Handles.

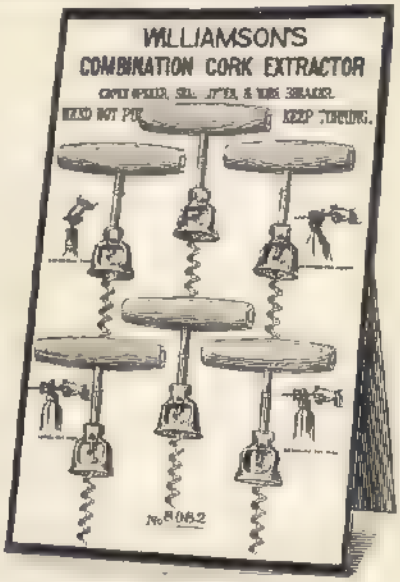
No. **6152**..Per dozen $4.00

One dozen in a Box.

NO. 1642
Crucible Steel, Rosewood Handles, Nickel Plated.

No. **1642** .Per dozen $7.00

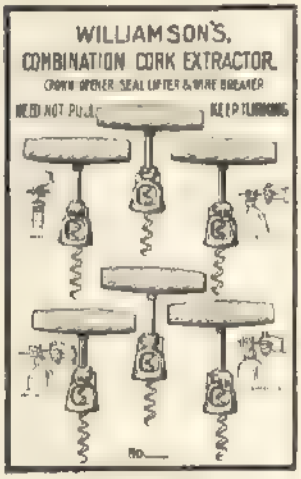
One dozen in a Box, or half dozen on a Card.



NO. 7082 D AND 8082 D
Norway Steel, Maple Handle.

No. **7082D** Nickel Plated, Copepered Cups. Per dozen $4.00
No. **8082D** All Nickel Plated Per dozen 4.70

Half dozen on a Card.



NO. 882D
Norway Steel.
Nickel Plated. Maple Handles.

No. **882D** ..... Per dozen $4.70

Half dozen on a Card.

"QUICK AS A WINK"

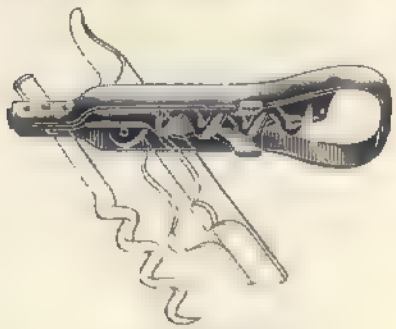
A Cork Puller, Not a Screw

"QUICK AS A WINK"

Does not damage the Cork, easily opens Bottles of all sizes, and recorks them with equal facility.

"Quick as a Wink" With Nickel Plated Shield .....Per dozen $4.00

One dozen on a Card.



"UNIVERSAL"

"UNIVERSAL" LEVER COMBINATION CORK EXTRACTORS

All Wrought Steel, Nickel Plated, Polished.

The Leverage is so applied that the most stubborn Cork is removed without effort, no tugging or straining against yourself, merely press down against the Bottle.

"Universal" ..... .Per dozen $4.00

One dozen on a Card.

CLEAVERS AND SPLITTERS

BEATTY BUTCHERS' CLEAVERS

Extra Heavy Steel, Varnished Hickory Handles, Tang Riveted through Handle.

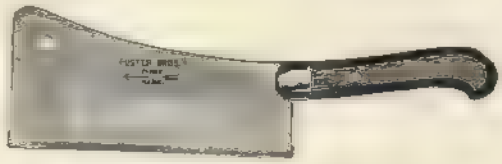
No.	9	10	11	12	13	14	15	16	17	18	19
Size No	00	0	1	2	3	4	5	6	7	8	9
Length of Blade, inches	6	7	8	9	10	11	12	13	14	15	16
Per dozen	$12.00	14.00	16.50	19.00	21.50	24.00	27 00	30.00	33.50	36.50	40.00

Half dozen in a Box.

FOSTER BROS. MARKET CLEAVERS

Extra Quality Steel, Varnished Handle, Scale Tang, Riveted.

Length of Blade, in.	6	7	8	9	10	12
" " H'dle, "	7	8	9	10	10	14
Weight, pounds	2	2½	3	3½	4½	5½
Per dozen	$16.00	17.50	19.00	21.00	23.00	28.00



FOSTER BROS. LAMB CLEAVERS

Extra Quality Steel, Varnished Handle, Scale Tang, Riveted.

Length of Blade, in.	7	8	9	10	12
" " H'dle, "	6	6	6	6	6
Weight, pounds	1	1⅛	1¾	2	2¼
Per dozen	$13.50	15.00	16 50	18.00	21.00

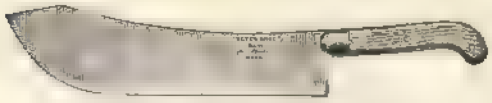
One dozen in a Box.

FOSTER BROS. PORK CLEAVERS

Extra Quality Steel, Varnished Handle, Scale Tang, Riveted.

Length of Blade, inches	7	8	9	10
" " Handle, "	6	7	8	9
Weight, pounds	2	2¼	2⅝	3
Per dozen	$15.50	17.00	19.00	21 00

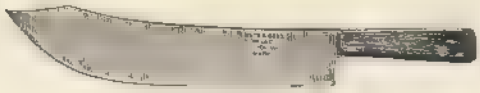
One dozen in a Box.



FOSTER BROS. LAMB SPLITTERS

Extra Quality Steel, Varnished Handle, Scale Tang, Riveted.

Length of Blades, inches	10	12	14
Weight, pounds	1⅜	2	2⅛
Per dozen	$19.00	22.00	25.00



FOSTER BROS. FISH SPLITTERS

Beechwood Handles.

Extra Quality Steel, Varnished Handle, Scale Tang, Riveted.

12 inch Blades.....Per dozen $15.00

One dozen in a Box.

MAXON-MILLER LEVER JACKS

No. 00 Automobile Jack

FIG. 5415.

No. 1 R. R. Track Jack

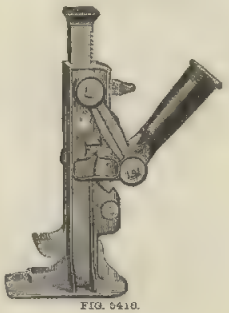


FIG. 5416.

No. 2 Safety Jack

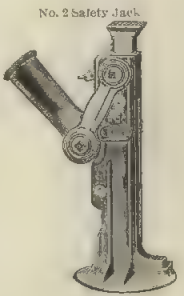


FIG. 5417.

No. 3 Safety Jack

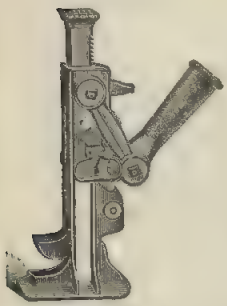


FIG 5418.

No. 00—For automobile uses.

No. 1—R. R. track; will lower notch by notch, or drop load instantly.

No. 2—For wrecking and handling loaded cars and general R. R. yard work.

No. 3—For street railways, saw mills, stone yards, mines and general building. Same construction as No. 1, but is provided with a stop same as No. 2, which prevents the load from being dropped while any weight rests upon the bar.

Numbers	Capacity, Tons	Height Jack, Inches	Rise Bar, Inches	Weight, Lbs.	List Price, Each
00	1½	11½	6	10	$4.00
1	15	22	12	65	22.00
2	18	29	15	120	40.00
3	6	20	11	45	16.00

BELL BOTTOM JACK SCREWS

Plain

FIG. 5413.

Capacity	Plain, Tons	Ratchet, Tons
1¼-inch diameter screw.....	10	12
1½ " " "	12	16
1¾ " " "	16	20
2 " " "	20	24
2¼ " " "	24	28
2½ " " "	28	32
3 " " "	36	40

Ratchet

FIG 5414.

Diam. of Screw, Inches	Height of Stand, Inches	Plain: Height Over All, Inches	Plain: Price, Each	Ratchet: Height Over All, Inches	Ratchet: Price, Each
1¼	4	6¾	$2.90	7⅝	$9.80
1½	6	8¾	3.10	9⅝	10.10
1⅝	8	10¾	3.40	11⅝	10.40
1¾	10	12¾	3.80	13¾	10.80
1¾	12	14¾	4.20	15⅝	11.20
1¾	14	16¾	4.60	17⅝	11.60
1½	4	7	3.25	7⅞	11.25
1½	6	9	3.75	9⅞	11.75
1½	8	11	4.25	11⅞	12.25
1½	10	13	4.75	13⅞	12.75
1½	12	15	5.25	15⅞	13.25
1½	14	17	6.00	17⅞	14.00
1½	16	19	6.75	19⅞	14.75
1⅝	5	8	4.25	9	13.25
1⅝	6	9¼	4.50	10	13.50
1⅝	8	11⅝	5.00	12	14.00
1⅝	10	13⅝	5.75	14	14.75
1⅝	12	15⅝	6.25	16	15.25
1⅝	14	17⅝	6.75	18	15.75
1⅝	16	19⅝	7.50	20	16.50
1⅝	18	21⅝	8.50	22	17.50
2	5	9	5.00	9	14.50
2	6	10	5.25	10	15.25
2	8	12	6.00	12	16.00
2	10	14	6.75	14	16.75
2	12	16	7.50	16	17.50
2	14	18	8.25	18	18.25
2	16	20	9.25	20	19.00
2	18	22	10.25	22	19.75
2	20	24	11.50	24	20.50
2	22	26	12.50	26	21.50
2	24	28	13.50	28	22.50

Diam. of Screw, Inches	Height of Stand, Inches	Plain: Height Over All, Inches	Plain: Price, Each	Ratchet: Height Over All, Inches	Ratchet: Price, Each
2¼	6	10	$7.00	12	$18.00
2¼	8	12	7.50	14	19.00
2¼	10	14	8.25	16	20.00
2¼	12	16	9.00	18	21.00
2¼	14	18	10.00	20	22.00
2¼	16	20	11.00	22	23.00
2¼	18	22	12.00	24	24.00
2¼	20	24	13.25	26	25.00
2¼	22	26	14.50	28	26.00
2¼	24	28	15.75	30	27.00
2⅜	6	10¼	7.75	12	19.50
2⅜	8	12¼	8.75	14	20.50
2⅜	10	14⅜	9.75	16	21.50
2⅜	12	16⅜	10.75	18	22.50
2⅜	14	18⅜	12.00	20	23.50
2⅜	16	20⅜	13.25	22	24.50
2⅜	18	22⅜	14.50	24	25.50
2⅜	20	24⅜	15.75	26	26.50
2⅜	22	26⅜	17.00	28	27.75
2⅜	24	28⅜	18.25	30	29.00
2⅜	28	.....	.....	34	31.00
2⅜	32	.....	.....	38	37.00
3	14	18½	19.50	20	32.00
3	16	20½	20.75	22	33.50
3	18	22½	22.00	24	35.00
3	20	24½	24.25	26	37.00
3	22	26½	24.50	28	38.50
3	24	28½	25.75	30	40.00
3	30	34⅝	30.00	36	48.00

Levers will be sent only when ordered and will be charged for extra.

PHILADELPHIA LAWN MOWERS

STYLE A—ALL STEEL

10 inch wheel, 4 blade cylinder, train of three gears, double ratchet making both wheels drivers.

Superior in all points, being made entirely of steel, is much lighter in weight and draft. Having long and large bearings, is more durable and its construction perfect for fine work.

It has no competitor.

FIG. 5834.

Inch	15	17	19	21
List price	$25.00	28.00	31.00	34.00

STYLE B—HIGH WHEEL

FIG. 5835.

10 inch wheels, 4 blade cylinder, train of three gears, double ratchet making both wheels drivers.

Excels all other of this style by having removable box caps to take out the cutting cylinder without disturbing the frame, and it is easy to sharpen or repair.

In construction it is simple, light draft, and durable.

Inch	15	17	19	21
List price	$25.00	28.00	31.00	34.00

STYLE C

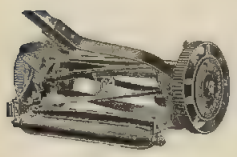


FIG. 5836.

8½ inch wheel, 4 blades, 5¼ inch cylinder, single pinion, geared on both sides.

This medium high wheel mower is constructed to insure fine work, and with its increased height of wheels runs light.

It is very popular for smaller lawns and private use. It has all our latest improvements and is perfect in every respect.

Inch	14	16	18	20
List price	$17.00	19.00	21.00	23.00

LAWN MOWERS

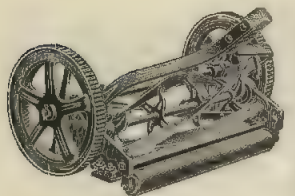


FIG. 5831.

"BESTOVALL"

This Machine is built of material of highest quality and is fitted with our Patented Ball-Bearing Adjusting Device. The balls, cups and cones are of high grade, uniformly hardened, polished and dust proof.

Has train of gears, open frame, four cutting knives and drives from both ends.

Diameter, wheels 10⅝ inches; cutter 7 inches.

Name...cut, inches	14	16	18	20
"Bestovall,....each	$25.00	28.00	31.00	34.00

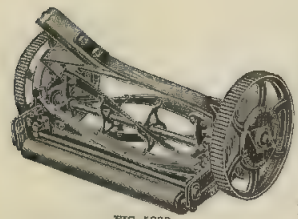


FIG. 5832.

"FORT PITT"

This Mower is fitted with our Patented Ball-Bearing Adjustment, the simplest and most effective made and the highest quality steel balls, cups and cones, uniformly hardened, accurately ground and dust-proof.

Four cutting blades. All latest improvements. The lightest running side wheel mower made.

Diameter, wheels 9⅛ inches; cutter 6 inches.

Name...cut, inches	14	16	18	20
"Fort Pitt,"...each	$17.00	19.00	21.00	23.00

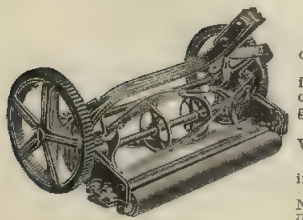


FIG. 5833.

"MONARCH"

It is built of first-class material throughout, strong and well finished.

It is fitted with our Patented Ball-Bearing Adjustment, and balls, cups and cones of high quality, carefully hardened, ground and dust-proof.

The best cheap mower on the market. Well made, durable, perfect in action.

Diameter, wheels 8 inches; cutter 5⅛ inches.

Name...cut, inches	12	14	16	18
"Monarch,"...each	$7.00	8.00	9.00	10.00

MATTOCKS

Soft steel body, adze eye, with extra full weight highest grade crucible steel bits and points, polished and tempered; axe finish.

FIG. 4632.

FIG. 4633.

	List Per Dozen
Adze Eye, Long Cutter, 6 lbs.	$17.00
" " Short " 5½ "	16 50
" " Long " Light	16 00
" " Short " "	16.00
Hunt " Long " 6 lbs.	17.00
" " Short " 5½ "	16.50
Adze Eye, Pick Mattocks	17.00
Hunt " " "	17.00

REGULAR ASPHALT MATTOCKS

FIG 4634

Weight, Pounds	9
Size of cutter, Inches	9 x 2¾
List per dozen	$25.00

IMPROVED ASPHALT MATTOCKS

FIG 4635

Weight, Pounds	11
Size of cutter, Inches	9 x 2¾
List per dozen	$30.00

HAZEL HOES

Width of Blade 6 inches, per dozen, $16.00

GRUB HOES

FIG. 4636.

	List Per Dozen
Western Pattern No. 0, 3 lbs	$12 50
" " " 1, 3½ "	13.00
" " " 2, 4 "	13.50
" " " 3, 4½ "	14.00

"BESTOVALL" SURFACE PICKS

Oil finished. Points best grade tool steel.

FIG. 4626.

No.	Lbs.	List Per Dozen
1	4	$14 00
2	4½	15 00
3	5	16.00
4	5½	17.00
5	6	18.00
6	6½	19 00
7	7	20 00

FIG 4627

CONTRACTORS' PICK

Any style of point. Oil finished. Best tool steel points.

Weight ... lbs.	6	6½	7	7½	8	8½	9	9½	10
List ... per dozen	$17 50	18.00	18.50	19.00	19.50	20.50	21.50	22 50	23.50

FIG. 4628.

MILL PICKS

Solid forged steel. Hardened polished bits. Axe finish.

Weight ... each, lbs.	2	2¼	2½
Width of Bit ... inches	1½	1¾	1¾
Length over all ... "	9¼	10	10¾
Weight ... per dozen, about	24	27	30
List ... per dozen	$22.00	22.00	22.00

FIG. 4629.

POLL PICKS

Oil finished. Points best grade tool steel.

Nos ...	1	2	3	4	5	6
Weight ... each	3½	4	4½	5	6	6½
Length over all ... inches	13½	14	15	16	17	18
Weight ... per dozen ...		48	54	60	68	72

List ... per dozen, $15 00

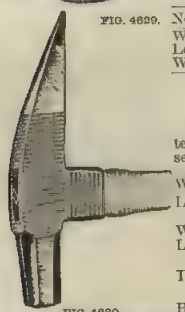


FIG 4630

PROSPECTING PICKS

Face and point are hardened, tempered and thoroughly tested. Highest grade crucible steel. Adze eye. Extra select hickory handle.

Weight each without handles ... lbs.	1	1¼
Length of head ... inches	7½	8
" over all ... "	18	18
Weight per dozen about ... lbs.	22	24
List ... per dozen	$15.00	16.00

FIG 4631.

DRIFTING PICK EYES, OR CENTERS

Soft steel, oil finish, adze eye. Size of eye 3x1⅛ inches. Ready for welding on steel points.

Weight each ... lbs.	3	4	4½	5	6
List ... per dozen	$7 50	8.50	9.00	9 50	10.50

CORN SHELLERS

"BLACK HAWK" Weight, 14 pounds.

Can be fastened to Barrel or Box Quickly and Securely by Clamps. Clamps, Wrench and Bolts furnished with each Sheller.

Per dozen $30.00

CARRIAGE KNOBS

Japanned. Length of Shank, ¾ inch.

No. **75** Per gross .75

One gross in a Box.

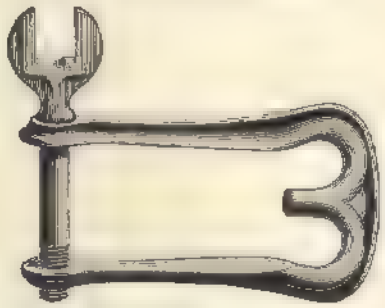
KNOB EYELETS

6 Prongs, with Leathers.

No.		Per gross.
1	Harness Leather Centre	.72
2	Pebble " "	.84

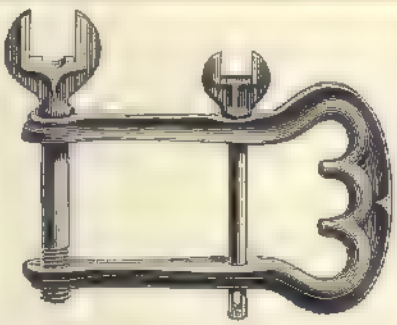
One gross in a Box.

PLOW CLEVISES



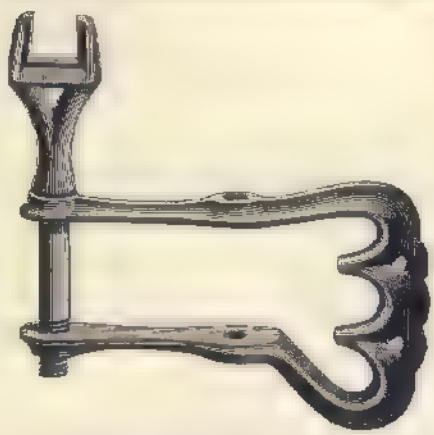
No. **2837** Light Pattern, 2 inch Beam, 4 inches from Centre of Wrench to End of Beam; entire length, 5¾ inches.

Per pound ..... .13



No. **2857** 2¼ inch Beam, 3¾ inches from Centre of Wrench to End of Beam; entire length, 7 inches.

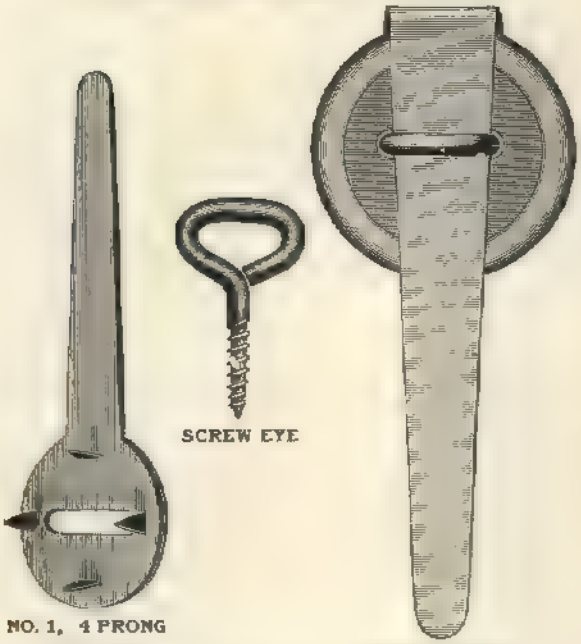
Per pound ..... .13



No. **2851** 2 inch Beam, 3 inches from Centre of Wrench to Centre of Pin; entire length, 6¾ inches; Wrench Openings, ¾ and 1⅛ inches. No Guide Pin furnished with this Clevis.

Per pound ..... .13

WAGON CURTAIN PATCHES



Cuts are Full Size.

No		Per gross.
1	Four Prongs, with Japanned Screw Eyes.	$3.00
2	Five " " " " "	4.50

No 1, one gross in a Box. No. 2, half gross.

ANTI-RATTLERS

GEM NO. 1

Steel Spring Wire, Coppered Finish.

Gem No. 1 Per dozen pairs 50

One dozen pairs in a Box.

BURTON'S NO. 3
ANTI-RATTLER AND BOLT HOLDER

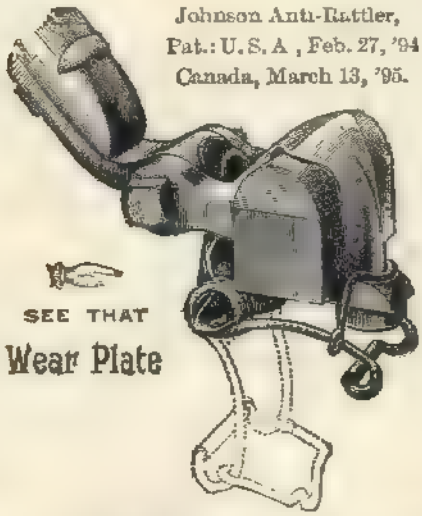
Made of 1/8 inch Steel. Finished in Blue Temper.

Burton's No. 3 Per dozen pairs $1.50

One dozen pairs in a Box.

ANTI-RATTLERS

Johnson Anti-Rattler,
Pat.: U. S. A., Feb. 27, '94
Canada, March 13, '95.

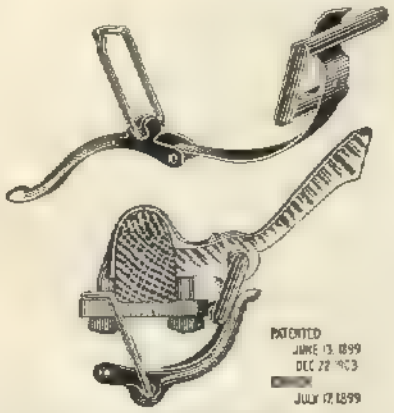


JOHNSON ANTI-RATTLER

Tempered Wire with Malleable Wear Plate. Japanned.

Johnson's Per dozen pairs $1.75

One dozen pairs in a Box.



FERNALD'S IMPROVED QUICK SHIFTER AND ANTI-RATTLER

Fits any Buggy, old or new. Can be changed from Shafts to Pole or Pole to Shafts in an instant without tools of any kind. Japanned.

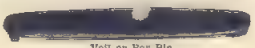
Quick Shifter Per dozen pairs $4.00

One dozen pairs in a Box.

Solid Gold and Rolled Plate Onyx, Jet and Enameled Jewelry.

Extra quality, all finely finished and made by the best manufacturers in these lines.

Veil or Bar Pin.
Black jet
No. 8009 Each $0.55



Veil or Bar Pin.
Black jet, rolled plate mounting.
No. 8010 Each $1 00

Black jet, pearl set, rolled plate mounting
No. 8011 Each $0.90

Veil or Bar Pin.
Black jet, pearl set, rolled plate mounting
No. 8012 Each $1 50

Brooch
Black jet, solid gold, genuine pearl set
No. 8013 Each $4 00
Black jet rolled plate mounting without set
No. 8014 Each $0.45

Brooch.
Black jet, rolled plate mounting, pearl set.
No. 8015 Each $0 55
Same without set
No. 8016 Each $0.50

Brooch.
Hard black enamel, satin finish.
No. 8017 Each $1.00

Brooch.
Black jet, satin finish, pearl set, solid gold mounting
No. 8018 Each $6.00
With gold filled mounting
No. 8019 Each $1 50

Brooch.
Black jet, satin finish, pearl set, solid gold mounting
No. 8020 Each $5.00
With gold filled mounting
No. 8021 Each $1.00

Brooch
Black jet, 3 pearls, rolled plate mounting
No. 8022 Each $1 50

Brooch.
Black jet, rolled plate mounting.
No. 8023 Each $1.00

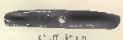
Brooch.
Black jet, pearl set, rolled plate mounting
No. 8024 Each $1.00

Brooch
Rolled plate mounting, hard black enamel, satin finish, 6 pearls
No. 8025 Each. $1.50

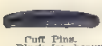
Chatelette
Black jet, solid gold mounting.
No. 8026 Each..$5.00

Chatelette
Black jet, solid gold mounting, 4 pearls
No. 8027 Each..$6.50

Waist Pins.
Black jet, rolled plate mountings.
No. 8028 Per pair .$1.50



Cuff Pins
Black jet, rolled plate mountings, pearl set.
No. 8029 Per pr $0 80

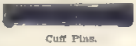


Cuff Pins.
Black jet, heavy solid gold mounting.
No. 8030 Per pr. $6.25

Cuff Pins.
Black jet, rolled plate mounting.
No. 8031 Per pr $0 60

Cuff Pins.
Black jet, rolled plate mounting.
No. 8032 Per pr $0.35

Cuff Pins.
Black jet, rolled plate mounting.
No. 8033 Per pr $0.55



Cuff Pins.
Black jet, rolled plate mounting
No. 8034 Per pr $0.80

Cuff Pins.
Black jet, rolled plate mounting
No. 8035 Per pr $1.00

Cuff Pins
Black jet, rolled plate mounting
No. 8036 Per pr $1.00

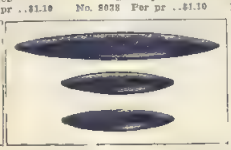
Cuff Buttons
Black jet.
No. 8037 Per pr ..$1.10

Cuff Buttons
Black jet.
No. 8038 Per pr ..$1.10

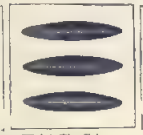
Piercedless Ear Screws.
Black jet, solid gold mounting
No. 8039 Per pr ..$4.75

Piercedless Ear Screws.
Black jet, solid gold mounting
No. 8040 Per pr . $3.75

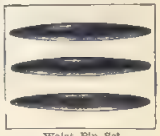
Waist Pin Set.
Black jet, pearl set, rolled plate mounting.
No. 8041 Per set $1 15



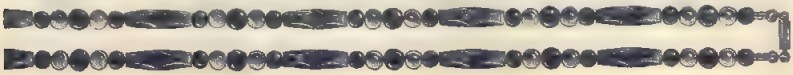
Waist Pin Set.
Black jet, rolled plate mounting.
No. 8042 Per set $1.50



Waist Pin Set.
Black jet, rolled plate mounting
No. 8043 Per set .. $1 15

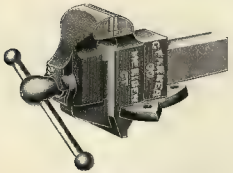


Waist Pin Set.
Black jet, rolled plate mounting
No. 8044 Per set . .$1.50



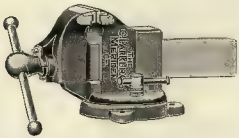
No. 8045 Necklace, length 18 inches, black jet, and alternate gold filled beads, each $6.00

PARKER'S VISES



NO. B, C AND D—VULCAN STATIONARY
Solid Steel Faced Jaws.

No.	Width of Jaw, in.	Opens, in.	Weight, lbs.	Each.
B	3⅝	5	31	$7.00
C	4½	5½	48	8.50
D	4⅝	6½	62	10.00



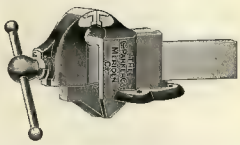
NO. 229 AND 249—SWIVEL, SEMI-STEEL
Reinforced Slide, Solid Jaws, Renewable Steel Faces.

No.	Width of Jaw, in.	Opens, in.	Weight, lbs.	Each.
229	3⅝	4	36	$7.00
249	4¾	7	75	11.00

COMBINATION PIPE VISES, SWIVEL BOTTOM

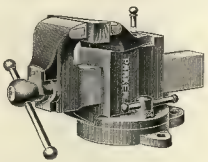
No.		Each
87	Width of Jaw, 3⅝ inches; Opens 4¾ inches; Holds Pipe 2 inches and under; Weight, 41 pounds	$16.00
88	Width of Jaw, 4½ inches; Opens 6 inches; Holds Pipe 3 inches and under; Weight, 59 pounds	20.00

The Steel Faces of these Pipe Vises are Milled and fitted to the Jaws, and are renewable.



NO. 29, 39 AND 49—STATIONARY, SEMI-STEEL
Reinforced Slide, Solid Jaws, Renewable Steel Faces.

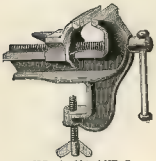
No.	Width of Jaw, in.	Opens, in.	Weight, lbs	Each
29	3½	4	31	$6.25
39	3¾	6¼	47	7.00
49	4¾	7	66	9.00



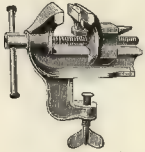
NO. 270, 271 AND 272—VICTOR SWIVEL, SEMI-STEEL
Reinforced Slide, Solid Steel Bar.

No.	Width of Jaw, in.	Opens, in.	Weight, lbs.	Each.
270	3⅝	3⅝	32	$7.00
271	3⅝	5	49	8.50
272	4½	6	69	12.50

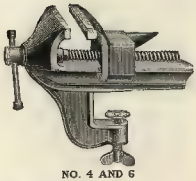
BONNEY'S VISES
WITH SOLID STEEL SCREWS



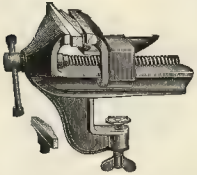
NO. 1, 1½ AND 2



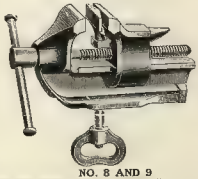
NO. 2½, 3 AND 3½



NO. 4 AND 6



NO. 5 AND 7



NO. 8 AND 9

No.	with	Jaws	Weight, pounds	Per dozen
1	1¼ inch	Iron	1¼	$3.75
1½	1¾	"	1¾	5.00
2	2	"	2	6.50
2½	2	Steel	2¼	9.75
3	2¼	and Swivel Jaw	2¾	12.00
3½	2¼	Iron	2¾	8.50
4	2¾	"	5	16.50
5	2½	and Swivel Jaw	5	19.50
6	2¾	Steel	5	19.50
7	2½	and Swivel Jaw	5	22.50
8	2¾	"	5	19.50
9	2¾	and Swivel Jaw	5	22.50

SET NO. B1

Sample Stand and 12 Vises, one of each number, as described above ------ Per set $15.00

UNION OR FAMILY SCALES

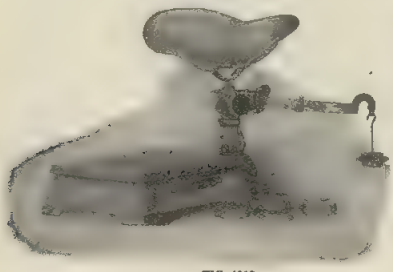


FIG. 4898.

This style construction combines capacity and fine weighing in one scale. Having a capacity of 240 pounds by ¼-pound marks when weighing on large platform, or 80 pounds by ⅛-ounce marks when load is placed in scoop or on small platform.

A good general purpose scale for all trades, furnished with either single or double beam; also with either a fork for scoop or with small platform.

Capacity, ½ ounce to 240 pounds.

Platform, 10½x18½ in.

No.	WITH ONE PLATFORM	Each
500.	Single beam, seamless tin scoop	$14.00
502.	" " " brass "	15.00
504.	Double " " tin "	15.00
506.	" " " brass "	15 00

No.	WITH TWO PLATFORMS	Each
508.	Single beam, seamless tin scoop	$14 50
510.	" " " brass "	15 50
512.	Double " " tin "	15 50
514.	" " " brass "	16 50

FIG. 4899.

GROCER SCALES

This scale, as its name implies, is a favorite with the grocers; is also used either with or without scoop by hardware and supply stores.

Beam is graduated ½ ounce to 3 pounds. The tare beam on double beam also has the same graduation thereon.

No.	CAPACITY, ½ OUNCE TO 36 POUNDS	Each
570.	Single beam, seamless tin scoop	$10 00
572.	" " " brass "	11.00
574.	Double " " tin "	11.00
576.	" " " brass "	12.00

No.	CAPACITY, ½ OUNCE TO 62 POUNDS	Each
536.	Single beam, seamless tin scoop	$12 50
538.	" " " brass "	13.50
540.	Double " " tin "	13 00
542.	" " " brass "	14 50

PLATFORM COUNTER SCALES

These Scales are especially designed for use on counter or bench; are finished with either tall or or short pillar to suit location and purpose for which they are to be used.

Capacity of scales, 300 pounds by 2 ounces.

Size of platform, 18½ x 19½ inches.

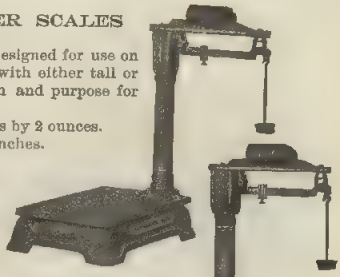


FIG. 4895.

FIG. 4896.

No. 1212.	Short Iron Pillar.....each,	$19.00
No. 1214.	Tall Iron Pillar..... "	21.00
No. 1230.	Tall Wood Pillar..... "	22.00

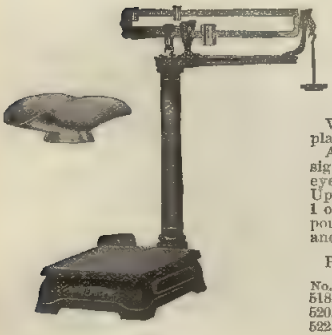


FIG. 4897.

BOSTON GROCER SCALES

With double brass beam nickel plated.

A handsomely finished Scale, designed to bring beam opposite the eye, where it can be easily read. Upper bar is graduated 11 pounds by 1 ounce, lower bar 50 pounds by 1-pound marks, with weight for balance of capacity of Scale, 250 pounds.

Platform, 10½ x 14½ inches.

No.		Each
518.	With heavy Tin Scoop....	$24.00
520.	With heavy Brass Scoop..	25.00
522.	With seamless Tin Scoop.	26.00
524.	With seamless Brass Scoop	27.00
521.	With Enameled Platform.	27.00

1910 Broc Electrics

BY S. L. G

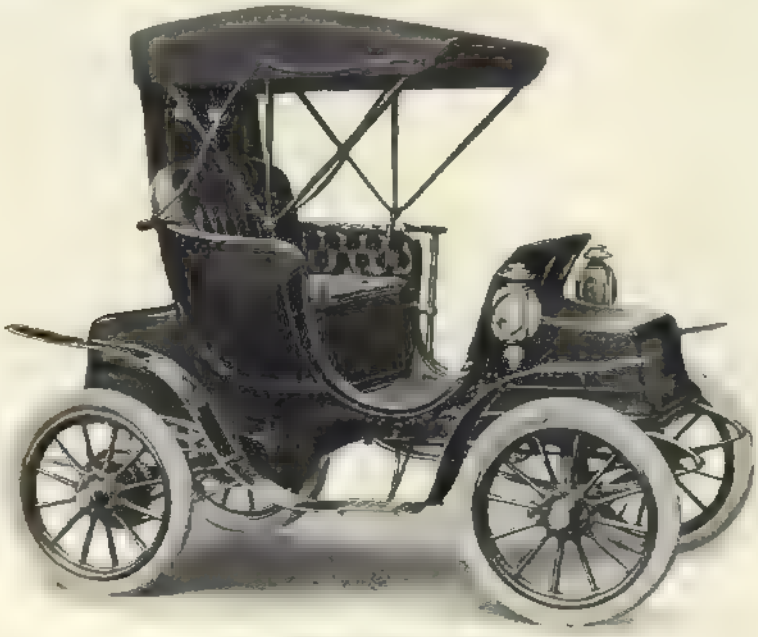
Fortified by years of experience in the building and operation of motor vehicles of every description, the Broc Carriage and Wagon Company, of Cleveland, again comes forward this season with the Broc Electric, which it confidently proclaims as "the perfect car." That is a pretty broad statement, and right here it might be pertinent to enumerate some of the points on which the company bases its claims, and which go far toward putting it in the perfect class. These include theft proof safety appliances, continuous torque control, efficiency and durability, interchangeable bodies, simple and effective controller, ample brakes, interchangeability of parts, imported German ball bearing throughout, and the highest quality of material and workmanship possible.

The 1910 Broc is not an experiment, being a continuation of last year's model with the addition of certain refinements that promise to make it even more popular with the man in quest of a car built for service. There is much in the Broc Electric to indicate that lessons learned in the carriage and wagon building industry are being given practical application here. Efficiency is best proven by actual tests, and the designers of the Broc have incorporated features that commend themselves from the standpoint of utility. The chassis is simple yet possessing great strength. It is made of extra quality pressed steel, with all connections hot riveted and double cross membered both front and rear with steel plates. Not content with this additional steel plates running diagonally between the points where the cross arms join the side members give added rigidity to the frame and provide a firm support for the batteries. Highest grade crucible steel springs, semi-elliptic in front and full-elliptic in rear, give exceptionally easy riding qualities and prevent the rocking motion that is often noticeable in cars of this type

Vanadium steel is used in the axles, and it is the proud boast of the makers that there is yet to be discovered a Broc electric with a broken axle or any other difficulty in this quarter.

The power plant is virtually a unit, the motor, controller, armature shaft brake, transmission, jackshaft, reduction chain, roller chains and distance rod brackets all being anchored to a sub-frame which in turn is securely fastened to the chassis. The arrangement is such that continued alignment is assured under all conditions, thus eliminating one of the most fruitful sources for reducing mileage and decreasing general efficiency, which, of course, means a corresponding decrease in cost of operation and maintenance.

The motor is a special design, manufactured by the General Electric Company. It is series wound and slow speed, rated at two horsepower, and, it is asserted, will develop more power without injury than any other motor made. It has a 300 per cent. overload capacity, is enclosed in such a manner as to make it proof against outside



1910 Broc Electric Stanhope

Weight, 1850 pounds; prices range from $1,[illegible]0 to $2,500; power plant anchored to sub-frame, motor series wound 2 H. P., 300 per cent. overload capacity; transmission by silent chain reduction and side chains to sprockets on rear hubs; internal expanding and controller brakes; [illegible]ous torque controller; 5 speeds forward and reverse

matter, and is extremely quiet running at all times. The motor is specially wound, and battery connections are such as to prevent loss of power while operating on any speed. There are no resistance coils, and every precaution has been taken to insure maximum mileage without recharging of batteries, thereby lengthening their life.

Transmission is by silent chain reduction and side chains to sprockets on the rear hubs, the chains used being of ample proportions and so constructed as to be practically noiseless in their operation. Internal expanding hub brakes operating by a foot pedal serve to give ample control, and there is also an efficient controller brake located on the forward end of the armature shaft.

The controller is a continuous torque with five speed changes forward and reverse, so devised that it does not spark in making changes. In this connection the method of securing reverse is worthy of mention, this being one of the points emphasized by the makers. To go into reverse the controller must be in a neutral position, thus precluding the possibility of accident or of going from bad to worse in the event of the driver becoming excited when caught in a tight place. When neutral has been gained, the reverse or left pedal is pushed forward until it locks. Then the controller lever is thrown forward to any of the five speeds desired, it being possible in this manner to gain any rate while in reverse that would obtain in going forward. To further preclude the possibility of harm coming from the operator's confusion, the reverse lever stays locked until the controller has again been put in neutral, when it then releases itself automatically. As another step toward making the car fool proof, the controller, once the starting key has been withdrawn, must be in neutral before the key can be reinserted. In this manner it is possible only to start the machine on slow speed.

Steering is by means of a side lever, hand forged, with electrically welded head, and offset in a manner that gives the operator considerably more room.

Two styles of batteries are employed, the Stanhope, having 11 M. V. Exide with 28 cells, and the Coupe, being fitted with 30 cell batteries of similar type.

1910 Broc Electric Coupe.
Weight, 2250 pounds; chassis same as for Stanhope model

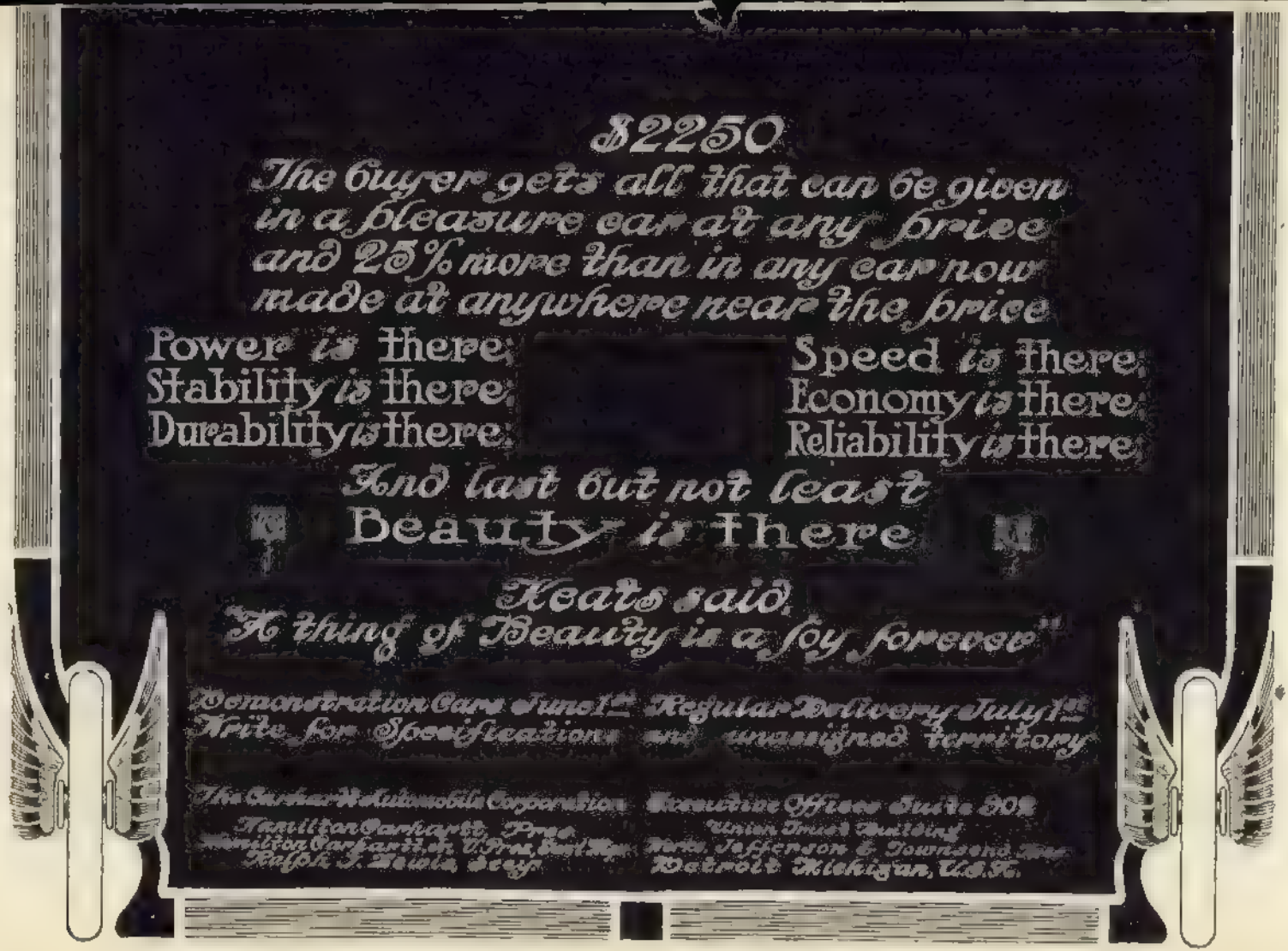
Apparently nothing has been overlooked that would in any way increase the car's efficiency, two-point ball bearings being used on all revolving parts. The balls are of best hard steel, made in Germany, and warranted not to crush, while the races in which they travel are a special design peculiarly adapted to the work in which they are employed.

The Broc Electric has a wheel base of 80 inches, 50-inch tread, with 32-inch artillery type wheels, fitted with Goodyear Quick Detachable rims, and 3½inch front and rear double tube Quick Detachable Palmer web pneumatic tires.

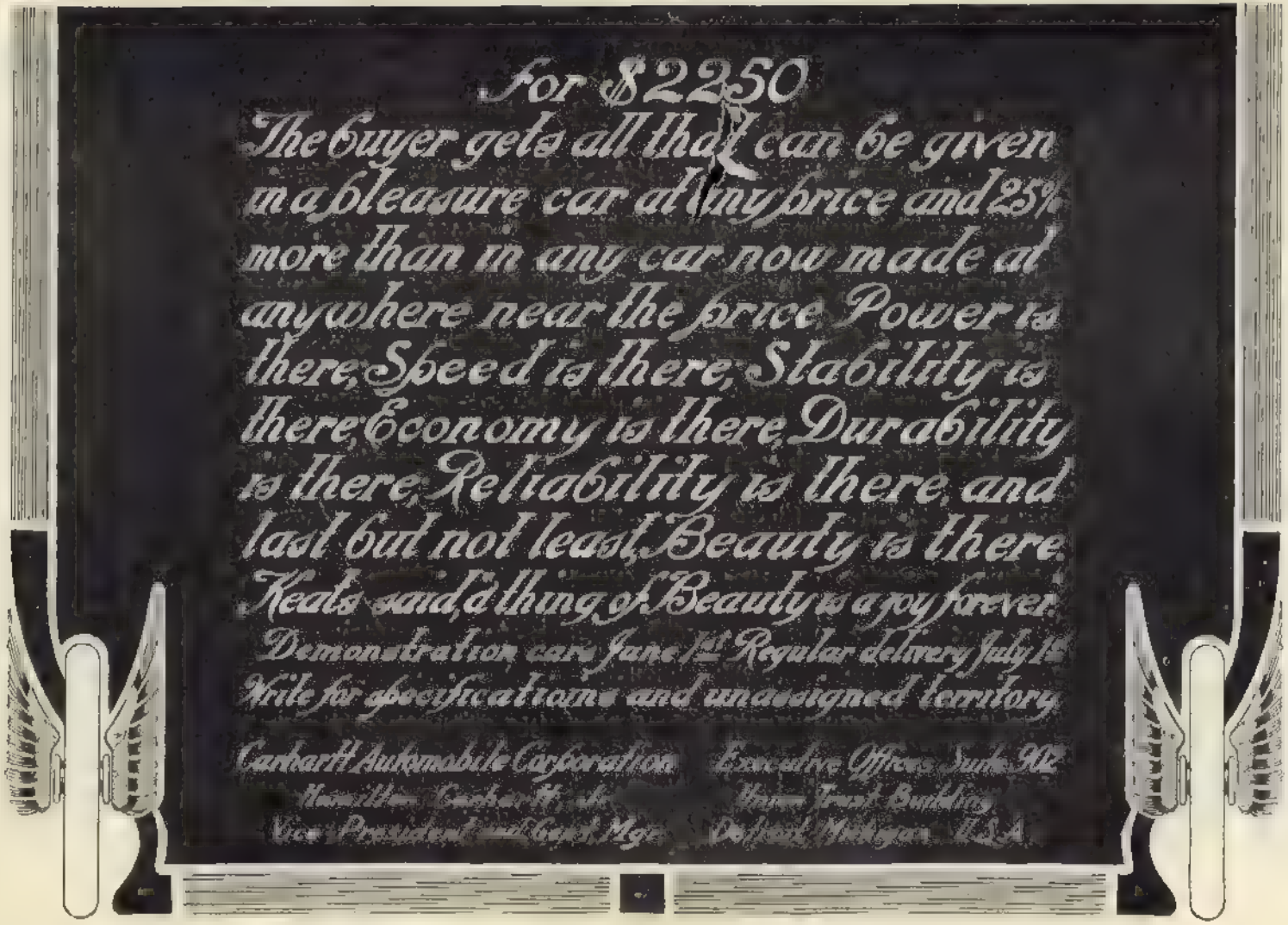
All those little touches that denote the master hand are observable in the bodies, which are built under the same roof as the car. All support, panels and other points where strain is liable to cause cracks or separation are reinforced, the hoods are metal over wood, and all edges are finished with pure aluminum moulding, thus insuring water-proof joints.

With complete equipment the Stanhope weighs 1,950 pounds, and the Coupe 2,250 pounds. The range of prices is from $1,900 to $2,500.

First in the field for 1911
The Beautiful Carhartt Automobile
The last word in Motor Car Construction
Makes all other automobiles look numb


$2250
The buyer gets all that can be given in a pleasure car at any price and 25% more than in any car now made at anywhere near the price
Power is there
Stability is there
Durability is there
Speed is there
Economy is there
Reliability is there
And last but not least
Beauty is there
Keats said,
"A thing of Beauty is a joy forever"
Demonstration Cars June 1st Regular Delivery July 1st
Write for Specifications and unassigned territory
The Barbour-Stockwell Automobile Corporation
Hamilton Carhartt, Pres.
Executive Offices Suite 902
Union Trust Building
Cor. Jefferson & Townsend Aves.
Detroit Michigan, U.S.A.

First in the Field for 1911
The Beautiful Carhart Automobile
The last word in Motor car Making
all other automobiles back numbers


For $2250
The buyer gets all that can be given in a pleasure car at any price and 25% more than in any car now made at anywhere near the price. Power is there, Speed is there, Stability is there, Economy is there, Durability is there, Reliability is there, and last but not least, Beauty is there. Keats said, a thing of Beauty is a joy forever.
Demonstration cars June 1st. Regular delivery July 1st.
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IT MAKES A
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DIFFERENCE

hundred, 3½ inch $10.00; 3½ inch, $11.00, and 4 inch, $13.00

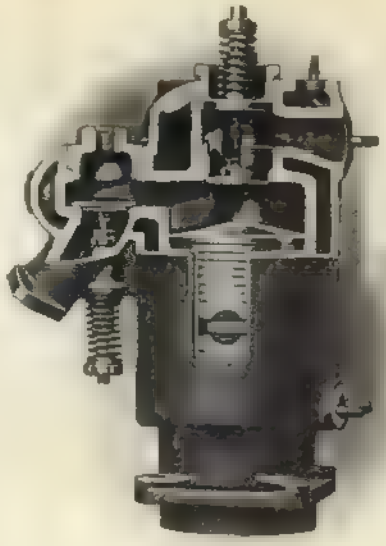
The "Presto" Cross Chains list at $14.00 per hundred for the 4½ inch size; $15.00 for 5 inch and $18.00 for 5½ inch size. "Presto" Hooks list at $3.00 per hundred

THE 1910 "MODEL" MOTOR

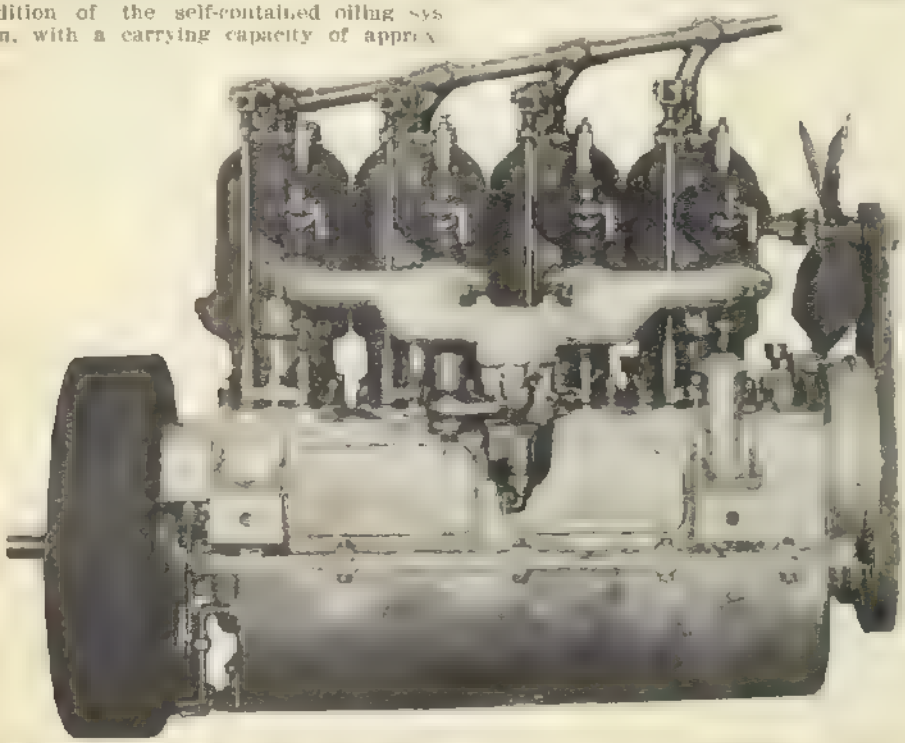
For the season of 1910 the Model Gas Engine Works, of Peru, Indiana, are putting on the market six different sizes of four-cylinder gasoline motors identically alike with one exception. They range in size from 4-inch bore and 5-inch stroke giving thirty horse power to five inch bore and six inch stroke giving fifty-five horse power

The design with reference to the location of the valves, with the exhaust in the head and the intake at the side and the single cam shaft, is the same as in former years. The use of the I-beam section in the construction of the crank case is also retained. Steel rods run clear through the crank case, the ends on one side supporting the cylinders and those on the other holding the adjacent crankshaft caps. The convex piston heads are used the same as last year and the practice of machining the cylinder heads on the inside the same as the side walls in order to eliminate carbon troubles is continued.

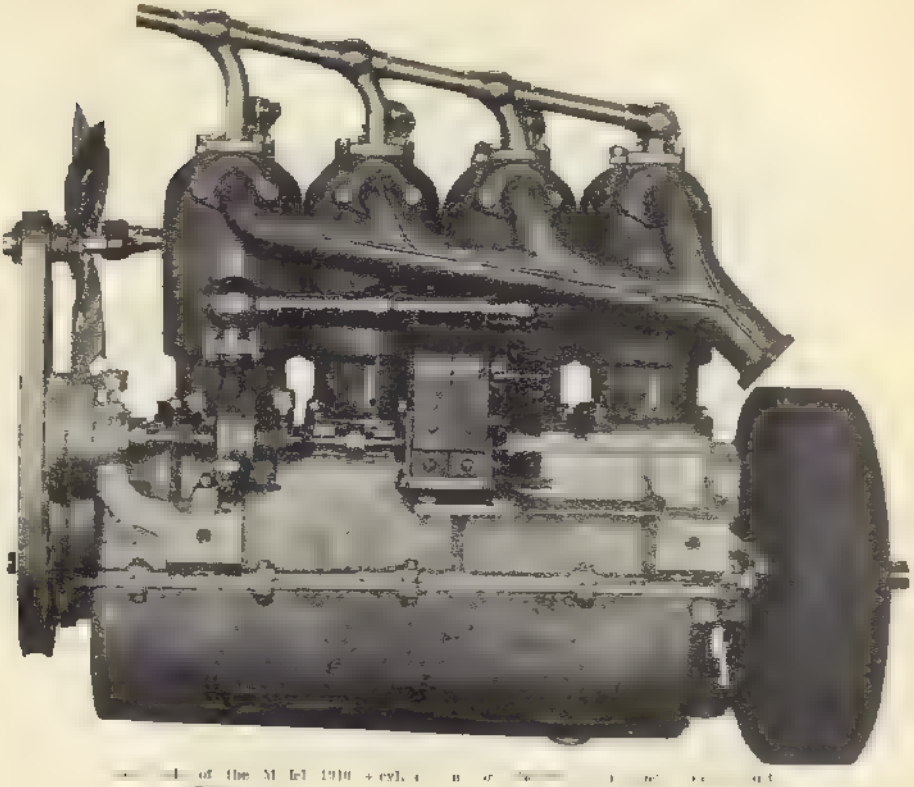
By way of refinement there have been several changes made in this year's motor, among the most important of which is the addition of the self-contained oiling system, with a carrying capacity of approximately two gallons, making it possible to run from six to eight hundred miles without adding lubricant. To further eliminate noise the gears have been enclosed in an oil-tight compartment. An idle gear has been interposed between the crankshaft gear and the pump gear, thus getting the



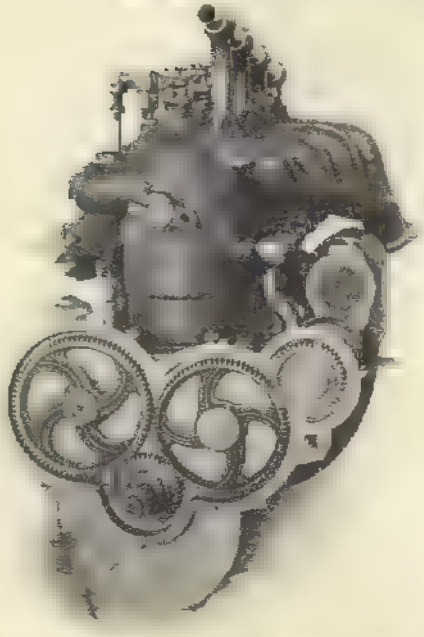
View of the cylinder of the Model 1910 motor with part of the wall cut away



One [illegible] of the Model 1910 motor, showing the exhaust valves located in the head and operated by [illegible] rocker arms. The [illegible] of the three cylinders while on the side [illegible]



[illegible] of the M [illegible] 1910 4 cyl. 4 [illegible]



[illegible] removed showing [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

drive of both the pump and the magneto away from the camshaft gear. The pump and magneto have been set on the opposite side of the motor and in such a position that either can be quickly removed without interfering with any other part of the motor, as the couplings between both pump and magneto and pump and driving gear are flexible. The lower part of the crank case has been rearranged so that it acts only as a cover and an oil reservoir. It is entirely independent of the bearings, making it possible not only to remove quickly, but to run the motor with the cover removed and all the bearings in place, thus facilitating adjustment. The vent pipe has been designed so that it acts as a filling cap and makes it impossible for oil to escape

All bearings are of the genuine nickel babbitt die cast type All bearing caps are manganese bronze into which the die cast bearings are fitted The cam shaft is a solid forging. The cylinders are bored, reamed and ground. Pistons are all finished except grinding, then annealed so as to prevent change of shape and afterwards ground. Piston pins rocker arms, rocker arm pins, valve lifters, and all other parts on which there is any wear are also hardened and ground

The gradual increase of the exhaust pipe as each cylinder leads into it is clearly shown in the photograph; the outlet being approximately four times the area of the exhaust port from each cylinder.

Every part is interchangeable and any part of the motor can be replaced without any additional part and that, too, without

any filing or fitting. Special attention has also been given to the question of accessibility, as is clearly shown in the accompanying cuts.

While the motor, due largely to the steel rod construction referred to, is extremely light for the horse power developed, the bearing surfaces are extremely large, and this, together with the five-bearing shaft, insures a motor of long life

The clutch is of the cone tye, covered with raybestos (six engaging springs being placed under the raybestos to insure smooth working of the clutch), and is equipped with ball bearing release collar. It has a flange connection for the double universal joint, which is of a well known type, all points hardened and ground, and fitted with a boot.

THE "HUTCHISON" MARINE TACHOMETER

Although this instrument is designed primarily for marine service, still it can be applied to any purpose where it is necessary for indicating precisely the rate of rotation of any machine at one or more points remote therefrom.

Essentially the Hutchison tachometer may be considered as two parts: (1) An alternating current generator, or magneto, of the revolving field inductor type, driven by the shaft, the speed of which is to be measured. (2) A voltmeter, wired up to the generator, and located at any remote point where indications of speed are desired. The voltage of the generator is proportioned to its speed, so that the voltmeter can be calibrated to read direct in R. P. M.

[illegible] of the Hutchison Marine Tachometer. The upper or skeleton view shows the [illegible] is installed on the shaft and driven by sprocket chain drive from shaft.

In practice a plurality of volunteers or indicators, placed at widely separated points, may be operated from the same generator, so that the tachometer will indicate speeds at as many points as desired, as far away as desired, within reasonable limits. A number of operators, therefore, at widely separated points can have precise indications of speed always before them, so that intelligent, concerted action may result.

In the accompanying illustration the shaft of the ship is represented by P and rotation is imparted to the driving sprocket B by chain C. Sprocket B is rotatively mounted on the generator shaft D and drives the flywheel F through two oppositely coiled spiral springs E E, one end of spring being attached to B and the other end to F. Any inequalities in the angular rate of P are absorbed by the springs and flywheel, so that uniform resultant velocity is imparted to the magnetos so that their voltage does not jump and cause the indicator needle to vibrate.

Using the alternating current system makes the Hutchison tachometer extremely simple and free from errors, due to changing resistance. There are, of course, no brushes, slip rings, or commutators, and in fact every joint from the armatures of M and L to the indicator, is soldered. The current required for the operation of the indicators, even if a number of them are employed, is minute, making the transmission safe and easy.

The instrument is described in detail in a bulletin which has just been published by the manufacturers, The Industrial Instrument Company, and may be obtained by applying to their office at 50 Church st., New York City.

B. K. F. RADIAL BALL BEARINGS AND THE FULMINA MAGNETO

J. H. Lehman Manufacturing Company, New York City, are marketing a line of the B. K. F. Radial Ball Bearings These bearings are of the separated ball type, the balls being carried in pockets or separators consisting of a one-slot anti-friction steel ring which is machined to receive the balls. A protecting ring fitted in a groove and provided with means for holding it in place without the use of screws or rivets prevents the falling out of the balls or separators. These bearings are made in all the regular metric sizes.

A special feature of the construction which adds to the wearing qualities is a patented process by means of which the ball races are rolled, forged and welded so that the grain of the metal instead of running diagonally or crosswise, follows the curvature, thus the balls are rolled with the grain of the metal—a feature which has

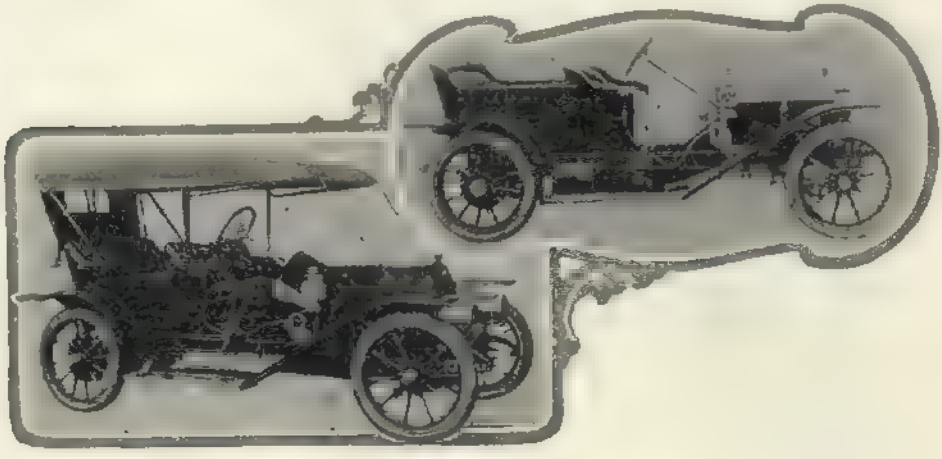
A New Pullman Model

The very latest addition to the Pullman line and one of the most popular of the 1910 models made by the Pullman Motor Car Co., York, Pa., is the Model O 30 horse power machine. The Pullman Company claim that the value represented by this machine is unapproached at the price by any car on the market to-day. It is fitted with a detachable toy tonneau, also with surrey, double bucket and regulation roadster bodies, the price being $1650 with any of these bodies. This car has a four-cylinder, four-cycle water cooled motor of 4 1-32 inches bore and 5 inch stroke. The cylinders are of fine French gray iron, cast in pairs and bolted together, forming one continuous water jacket and giving an "en bloc" effect. The valves are on the opposite sides, being actuated by two cam shafts. The pistons, which are of the same material as the cylinders, are ground and tapered from the lower compression ring to the top, thus allowing for expansion of the upper end without binding. The wrist pins are made from special steel and are bushed with phosphor bronze, in which the piston pins work. The connecting rods are drop forged and fitted at the lower ends with white bronze bearings.

The shafts are forged from solid billets of alloy steel, and are offset from the center of the cylinders. Lubrication is by a constant level system, the oil being positively circulated. The height of the levels of the oil in the crank case compartments can be regulated by means of levers on the outside of the motor. The clutch is of the cone type and is faced with chrome leather fitted with spring inserts for gradual engagement.

The crank shaft has two main journal bearings and one intermediate bearing and runs in white bronze bushings. These bearings are 1⅝ inches in diameter, the front one being 3 1-3 inches long, the center 3 inches long and the rear bearing next to the clutch and flywheel 4½ inches long, which are very liberal proportions for a motor of this size.

The power transmitting system and counter shafts are carried on Hess-Bright annular bearings.



The Pullman "30."

This new Pullman is known as Model O, is powered by a 30 h. p 4 cylinder motor, fitted with finely finished wood and aluminum body and sells for $1650.

The rear axle has a pressed steel housing and is of the full floating type, using Timken roller bearings throughout. The brakes are of internal and external types working through equalizers operated in the usual manner on the brake wheel drums.

The bodies are of wood and aluminum, reinforced with steel and are upholstered in the finest grade of hand-buffed leather. The springs are of the semi-elliptic type, and are designed to afford the highest degree of comfort.

The equipment of the Model O is very liberal, including gas headlights, gas generator, two oil side lamps and an oil tail lamp, horn and tools.

The standard color is Pullman red, very durable and also a distinctive shade.

Last year's "Improvement Number" was so pronounced a success and so favorably commented upon that we have decided to make it an annual feature. Therefore if you want to be posted on what the parts makers and car manufacturers are doing for the 1911 season, don't fail to read the August issue.

The 1910 Kenmore Models

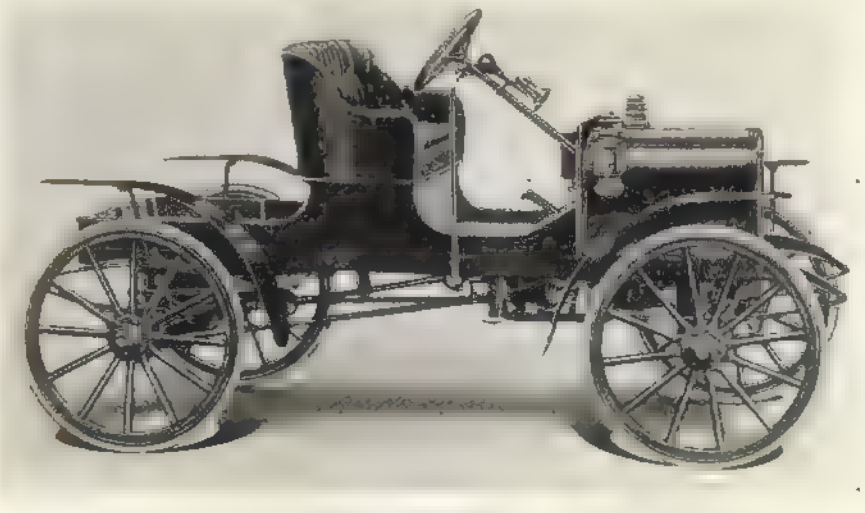
The Kenmore Mfg. Co., Chicago, Ill., are placing an attractive line of semi-high wheeled cars and pneumatic tired vehicles on the market at popular prices.

Motor.

The power plant consists of a 4¼x4½ 14-16 H. P. two cylinder, opposed, four cycle, air cooled motor, located in front of the dash and placed crosswise under the hood. This arrangement enables one standing in front of the car to easily reach any part of the engine for the purposes of adjustment and cleaning

It is not necessary here to enter into the respective merits of air cooled and water cooled motors, but it is a conceded fact that the popularity of air cooled motors for use in light motor vehicles is growing daily. The properly designed air cooled motor is a marvel of simplicity and power. With perfect cooling, 100 pounds less weight, and the absence of danger from leaks, freezing and faulty pumps, the owner of a "Kenmore" has no cause to fear that his power plant is liable to go wrong at the most awkward moment.

Particular attention is called to the workmanship, accessibility and material that go to the making of the motor: both cylinders and the crank case are made of fine grain soft grey iron and are cast in one piece. The crank shaft is a single drop forging made of a high grade carbon steel, turned and machined with great exactness. The bearings are of the best white metal the market affords. The valves are located on top of the cylinders at the outer ends: the intake valves are automatic and are located in the rear: the exhaust valves are mechanically operated and are located in the front. The exhaust valves are unusually large which accounts for the high speed at which the engine may be run. All removable plates as well as the crank case cover are made of aluminum and when the latter is taken off, the cam shaft, 2 to 1 gears, crank shaft, pistons, connecting rods and bearings are extremely accessible. The crank shaft can be easily removed, and it is claimed, the whole motor can be taken apart in less than thirty minutes.



Kenmore Model A.

Fig. 1. Motor two cylinders opposed, 4¼ x 4½, 14-16 h. p., air cooled located crosswise under the hood at the front jump spark ignition from dry cells and double dash coil, force feed lubrication, two speed planetary change gear 32 inch wheels fitted with 1½ inch solid rubber tires. The seat is 38 inches in width, 20 inches deep, plenty of leg room, steering post at considerable angle, space at the rear for tool box, luggage or single rumble seat. Price $500. Pneumatic tires $100 extra.

Three Point Suspension.

The motor is supported chiefly on two points, one at each end where a forging fitted into the head of each cylinder is bolted to the side member of the frame. These supports are swivel in nature so that the motor would rotate on the axis of these swivels if unsupported otherwise. This is prevented by a third support, a steel casting running backward from the motor to a suitable point in the third bearing hanger on a frame cross member. The power plant and transmission are so closely connected that they operate practically as a unit, and yet flexibility is provided.

There are pet cocks on top of the cylinders for priming, but this is rarely necessary except in extremely cold weather. There are also cocks beneath by which the cylinders and crank case can be instantly drained after cleaning by flushing same out with gasoline or oil. The motor is started with a spring crank that hangs permanently in front of the car.

The entire engine and moving parts are carried forward under the hood, where they are at all times easily accessible either for observation or adjustment. Accessibility is of prime importance, and as nearly all of the moving parts of the car are under the hood, they can be oiled and cleaned thoroughly by simply removing the hood and without the necessity of removing any part of the body. The hood is held securely by four special spring hood fasteners and is very easily removed.

Ignition.

Ignition is by high tension jump spark, current from dry cells through a double dash coil. The coil is adjusted at the factory to produce the hottest spark with the least amount of current and no further attention, it is said, need be given it. A set of 6 dry cells form part of the equipment. The box enclosing the coil is rubbed to a handsome finish and fitted with close fitting cover to protect it from moisture; it is attached to the dash by polished brass sockets.

The commutator is of special design, carefully tested and very simple, it is located back of the motor, and just over the crank shaft.

Lubrication.

Mechanical force feed oiling, absolutely positive in action, is used. Oil will flow as freely in winter as in summer. The lubricating oil tank is attached directly to the crank case of the motor and holds two quarts, sufficient to last for a run of 150 miles. Additional lubrication is supplied by grease cups.

Cooling.

Each cylinder of the motor is ribbed with parallel fins that carry off the excess heat so rapidly, it is claimed, that the motor will not overheat under any condition of service. The fly wheel is in front and its five spokes form the fan. This fly wheel fan sends a current of cool air that strikes every heated part of the motor.

The muffler is of sufficient size to prevent disagreeable noise from the engine and is said to give no back pressure.

The carburetor is of standard float feed design. It is perhaps the most important part of the power plant. After once adjusting it in a car at the factory, it should give a uniform mixture contifuously. The makers stating that they have tested nearly all of the carburetors on the market and found none that gave better results. The carburetor is situated just behind and a little below the motor where it will have the benefit of warm air.

Tank Capacity.

The gasoline supply tank is located under the seat on the left of the car where it may be conveniently refilled. It holds six gallons, sufficient to run the car 100 to 150 miles. The oil reservoir is attached directly to the crank case of the motor and holds two quarts of oil sufficient for a run of 150 miles

Planetary Gear.

The transmission is of the planetary type, giving two speeds forward and reverse, is simple and effective and attached directly to the engine. The transmission bands are securely held by the same steel casting which constitutes the third motor support and by this method of suspension, it is believed, all of the advantages of a unit power plant are gained. The makers have subjected this arrangement to the most severe side strains on rough roads without the slightest injurious effect. All gears in the transmission are of the best tempered steel with bronze bushings. A single side lever controls the two forward speeds and a pedal operates the reverse through specially lined friction bands which take hold without jar, enabling the driver to start the car, or increase the speed without disagreeable jerking thus insuring much longer life to the motor and other working parts. To start the car the side lever is drawn back slowly, the low speed is engaged by the tightening of the transmission band, and a smooth easy forward motion results. When in high gear, the entire transmission is firmly locked and revolves with the engine shaft, giving the direct drive.

Control and Steering

The spark and throttle levers are placed directly below the steering wheel. Steering is by wheel placed at the right side, directly in front of the operator, so that his movements in controlling the car do not interfere with the second occupant of the seat. The steering gear is of rack and pinion type. The steering column is enclosed in a stationary polished brass tube The wheel has a round wood rim 15 inches in diameter, held by a polished brass spider

Brakes

The Kenmore is fitted with a set of powerful brakes of the internal expanding type, operating directly upon the rear wheels. The internal expansion type of brake is probably the most powerful form of brake in existence, and is generally used as an emergency brake upon the heaviest touring cars. If, however, these brakes should become disabled, the car can be brought to a full stop almost immediately by throwing in the reverse speed of the transmission.

Springs

The front springs are semi-elliptic, 1½x38 inches long; rear full elliptic, 1½x36 inches long. The matter of springs has been given extra attention, in order to impart easy riding qualities to the solid tire models. These springs have been carefully tested, and the weight of the car evenly distributed upon them. They are made of high grade crucible steel, very strong and flexible.

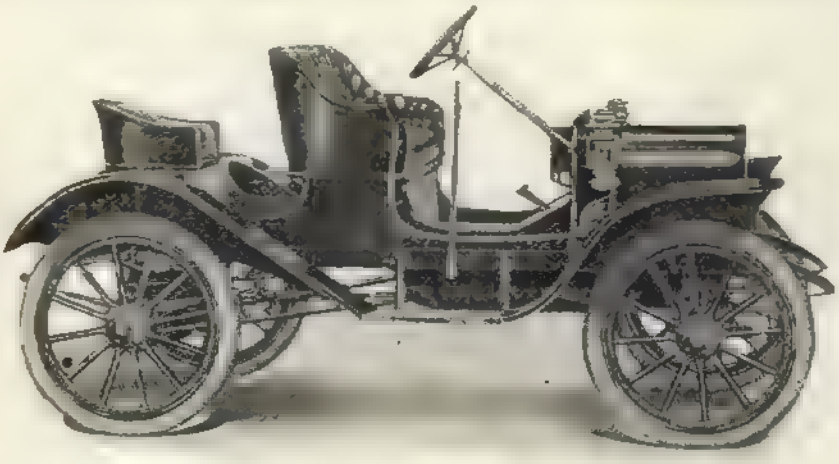
Fenders

The fenders and running boards of models "B" and "C" are designed along the latest lines. Just enough different from the conventional fender to give the car an individuality and just enough of that much-desired dashy effect to resemble the high-priced roadster, yet not so rakish as to be displeasing in general appearance. The fender fasteners, of special design, hold the fenders secure and rigid, preventing vibration and consequent rattling. Sheet metal risers join the fenders to the body. It is therefore impossible for any dust, oil or other objectionable matter to be thrown upon the occupants of the car when riding or entering it.

Axles

The front axle is the company's own special design; of the best grade cold drawn seamless 2 inch tubular steel, equipped with heavy pattern drop forged spindles, yokes, cups and cones are carefully hardened and accurately ground. The special steel steering knuckles are mounted in such a manner as to avoid any danger of the wheels getting out of alignment. The steering cross rod is placed in front of the axle, where it is very accessible to all necessary adjustment. Standard ball bearings are used in the front wheels.

The rear axle is of bevel gear type, driving through a steel cardan shaft with two universal joints of simple construction. The differential gear is of the two spur type; both spur gears and pinions are made from high grade steel, and the pinions are case hardened; the gear cases and covers for all gears are made from malleable iron.



Kenmore Model B.

Fig 2. This model is fitted with single rumble seat has the same general chassis specifications but 32 inch wheels are fitted with spoke, channels and Mo-z two inch cushion tires Price, $675 Pneumatics will be furnished at $50 extra. The rumble can be quickly removed making room for baggage, etc. Steering is by rack and pinion and 15 inch hand gear, polished brass column, internal expanding brakes on rear wheel, reverse of transmission can be used as brake

The bevel driving gears are made of steel and hardened and are fastened with screws to an independent shoulder of the gear case, and can therefore be removed without disturbing the rest of the gear. The pinions and axles of the differential are all formed in one part; on both ends of the pinions are formed ⅞ inch diameter by 7-16 inch long, axles which fit in corresponding holes in the wall of the gear case on one side and in the cover on the other side

The holes in the wall of the case and the cover in which the pinion ends revolve are not bored all the way through and the threaded holes for the screws which fasten the cover and the sprocket to the gear are on the outside, which renders the complete differential as near oil retaining and dust proof as possible. The divided axle, which is securely keyed to each side of the differential and to the hubs of the rear wheels, is of high grade axle steel, selected especially for this purpose, and revolves in Hyatt roller bearings.

Wheels and Tires

Model "A" is fitted with artillery type wheels 32 inches high over all, front and rear. Made of first grade selected hickory stock, with heavy 1¼ inch spokes and 1⅝ inch rims, fitted with 1⅜ inch solid rubber tires.

Woods Motor Vehicles

One of the pioneer electric car builders of the country is the Woods Motor Vehicle Company, of Chicago, who offer, in the Woods Electrics, for this season, a vehicle which is the result of a steady and consistent development covering a period of 13 years. This company, instead of experimenting along many different lines, developed early the salient features of the machine as it stands to-day. Advantage was taken of the fact that almost their entire output was sold in their home city and the performance of these models was closely watched, giving much more data than could possibly be had through two or three experimental models.

Believing that the batteries chosen should give the highest voltage possible, 40 cells were adopted, this being the largest number which can be properly charged with the usual source, namely, a 110 volt circuit.

In order to give the lowest operating cost, together with the greatest freedom from breakdown, solid rubber tires are employed. The company claims that the most careful tests have demonstrated that in the carriage proper, that is, the body portion above the vehicle springs, no difference in cushioning results were noticeable, under the operating conditions of an electric, whether solid or pneumatic tires were used. The only difference between the use of solids or pneumatics was in the effect on the parts below the vehicle springs. Of course it is recognized that the pneumatic tire is by far the better as a shock absorber, but by hanging the gear mechanism on a frame above the springs and by the use of anti-fatigue materials for axles and wheel bearings, entirely satisfactory results with solid tires can be had.

General Construction.

The motor, transmission gears, and driving sprockets form a unit mounted on a manganese bronze frame which is securely fastened to the vehicle frame proper at a point underneath the seat. Beneath this frame is the jackshaft, all parts of which are enclosed. A pinion on the end of the motor shaft meshes with a herring-bone gear which is mounted on the differential housing. The power to the driving sprockets at the outer ends of this jackshaft, is transmitted through short universal joint shafts. These outer ends are mounted on bearings in housings which are fastened to the manganese bronze frame so that they are free to swing. From these sprockets the power is transmitted through chains to the rear wheel sprockets, the chain distance being maintained by distance rods connecting the forward sprocket housings with the rear axle. Thus the tension on the chain can always be adjusted by means of a turnbuckle in the rod. Tests have shown, it is said by this company, that less power is consumed in traveling over rough roads by having the universal joint connections to the forward sprockets

Two of the Woods Electric Vehicles.

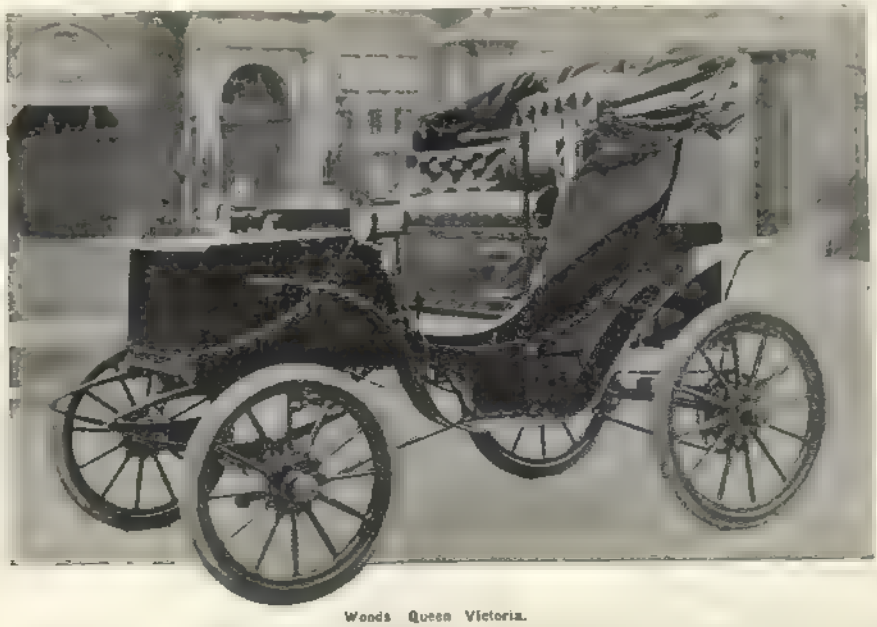
Fig. 1. At the right is shown the Model 1013, embodying several unique features in its construction. This roomy electric seats five persons, has I-beam chrome nickel steel axles, herring bone gears driving side sprockets through universally jointed countershaft, Woods four-pole series wound motor, continuous torque drum type controller with safety interlocking cut off; wheel base, 86 inches; gauge standard. The other model is the Woods' Queen [illegible] with brougham top. This same chassis can be fitted with other styles of tops and sold with two tops, brougham and carriage top for either winter or summer driving for $2.[illegible]. The general chassis specifications are about the same as the models

than would be the case with a solid jack shaft. The separate frame upon which the motor and driving gears, universal-jointed jackshaft, etc., are mounted can be quickly removed from the vehicle and all parts are housed and protected against the ingress of dirt and egress of oil. The transmission gears are of herring-bone type of special steel giving silent running. The differential is of bevel gear type; the sprockets are cut from drop forged blanks of special steel and case hardened

the bell operate on 40 volts and are permanently connected to wires away from the battery compartment. The controller is of drum-type built upon lines similar to street railway practice.

Brakes.

There are two brakes, one of contracting steel band type operating on a pulley wheel mounted on the armature shaft, the band being faced with woven asbestos and copper wire, and a set of enclosed expanding metal to metal brakes on the hubs of the



Woods Queen Victoria.

Fig. 2. This model is sometimes fitted with pneumatic tires and sells, complete, for $2100. Everything necessary for the operation of the car is supplied, lamps, tool equipment, odometer registering both trip and total mileage, combination ammeter-voltameter, etc.

The Motor.

To a large extent railway practice has been followed in the construction of the motor. It is made as near dust and water proof as possible and is of the four-pole series type. Consumption of battery power has been reduced to as low a point as possible. Drop forged copper commutator segments and reaction-type brush holders are employed, which together with careful insulating of the parts makes an efficient combination, as this company believes that a satisfactory horsepower rating for a motor cannot be given without knowing various conditions, no horsepower rating is given. It is said that the motor cannot possibly be overheated by continued operation as it is constructed to run the vehicle considerably longer than the rated capacity of the battery.

All wires are neatly but firmly attached in positions which protect them from injury yet make them accessible. These wires are covered with a special rubber composition which prevents corrosion. The lights and

rear wheels. The pull on these rear wheel hub brakes is equalized and bronze cables, which are non-rusting, strong as steel, yet flexible and non-rattling, are employed. The brake drums which are of hardened and ground steel are operated against by bronze shoes having a very powerful action

Springs.

As previously mentioned, special attention has been given the subject of the spring suspension owing to the use of solid tires, and a system of springs which have proven satisfactory, has been evolved. These consist of three-quarter elliptic side springs connected by a cross spring forming a three-quarter half platform spring at both front and rear. The lower half of the side spring is coupled to the cross spring through a single link shackle, thus fixing the relative positions of the axles. The span-irons are of I-section and made of Parsons manganese bronze.

The axles are of the usual standard design, properly heat treated to withstand the conditions under which they are used, and

are therefore given an unconditional guarantee.

Hess-Bright annular ball bearings are used throughout and are of sizes amply large for the service required. The housings are water and dirt tight and will retain their lubricant for a long time. These bearings are carefully mounted, all bearing seats being ground to micrometer sizes.

Special Speed System.

No resistance is used in order to provide the four uniformly graded speeds which are used. On the first speed the field wires of the motor are connected in series while two halves of the battery are in parallel. This operates the car on 49 volts with all of the cells discharging. On the second speed the battery arrangement remains the same, but the field wires are so connected that opposite coils are in series with one another and the two sets of the series coils are connected in parallel with each other. On the third speed the batteries are so connected that all the cells are in series while the fields are connected as on the first speed, thus operating on eighty volts. On the fourth speed the batteries remain as in the third, but the field wires are connected as on the second speed. This method of connecting does away with the use of resistance.

The Battery.

A thick plate, vehicle type, special Exide battery is used and the company call attention to the fact that this is not a thin plate battery which type is also manufactured by the Electric Storage Battery Company, of Philadelphia, who supply the special Exide battery used in the Woods machines.

Control.

The control levers are all on the left, steering being by a side lever fitted with adjustable ball and socket joints. A forward motion of the controller lever applies the power while a reverse motion of the same lever operates the contracting hand brake, locking it until a conveniently placed latch on the controller handle is released; this interlocking feature being one of the Woods' patents. The rear hub brakes are controlled by a foot lever.

Speed.

The maximum speed which is regularly supplied is nineteen miles without a top, the windage of an ordinary top naturally reduces the speed somewhat, although fifty miles on a charge is guaranteed, this is conservative, the makers stating that under good conditions nearer a hundred miles on a single charge can be obtained. The policy of rating the car mileage much lower than that which can actually be obtained has been adopted so that the guaranteed mileage can always be had in any locality, even under the worse and most adverse conditions.

The Woods Models.

One of the latest Woods Electrics is known as the Model 1012 and is shown at the right of Fig. 1. It is an enclosed coupe with spacious body comfortably seating five persons. The axles are of I-beam section, of chrome nickel steel which in itself is something of a novelty in electric vehicle construction. It has a wheel base of 86 in. standard gauge, solid rubber tires, 34 in. rear wheels, 30 in. front wheels. The 40 cells of 9 M. V. Exide battery are arranged in eight trays of 5 cells each. The controller, steering, motor, and transmission have already been covered in detail.

The equipment consists of two side lamps, head and tail lamps, two inside lamps, full tool equipment, dash board odometer, Weston ammeter and voltmeter, Yale locks on the doors and controller; toilet case, water and flower holder, trimmings and painting of any special character to meet the ideas of customers, without extra charge.

The Queen Victoria, with brougham top, is known as Model 214-C and sells for $2,650. This vehicle is shown in Fig. 1 at the left. The Model 214 is a Queen Victoria fitted with pneumatic tires and sells for $2,100 complete

The Bailey Light Electric

BY C. E. MORRIS.

Contrary to the general opinion, the light electric is much in demand. Of the makers of electric pleasure cars, S. R. Bailey & Company, of Amesbury, Mass., are notable for producing a light staunch machine. In common with many other carriage builders who were looking forward to future developments they embarked in the production of electric vehicles a few years back and have from one year to another improved their vehicle so that as it is sold to-day the Bailey light electric is a natty, light, sturdy and efficient vehicle. The victoria-phaeton type of body is used on the Bailey car and as here applied none of the harmonious lines of that type of vehicle are lost and it is but reasonable to assume that carriage makers who have produced high grade vehicles for the past two generations would be able to fit an electric car with a high class body equipment.

The price of the Bailey is $2,000 to $2,600 depending on battery equipment.

According to the sponsors of the Bailey, this car is the lightest electric vehicle of its type and size ever made. The total weight of the car is 2,000 pounds, the weight of the car itself minus the power plant, that is, the motor, countershaft and battery is but 825 pounds, yet strength has not been sacrificed for light weight as the chassis is sufficiently strong to carry more

of a weight than it actually has to carry, thus there is even a reserve in this direction. A feature of the Bailey car is that the weight is carried low despite the fact that the car is equipped with larger wheels than are generally used on cars of this class. The frame is of channel steel and is of a drop fashion, that is, it is curved, or dipped, so to speak, at the center. Frames of steel have not so very long been applied to light electric vehicles, but the advantages of such a construction are without question. As incorporated in the Bailey the steel chassis permits of a long wheel base so that

Bailey Electric Victoria Phaeton

Fig. 1. This vehicle equipped with Exide battery good for 40 miles and upwards on one charge sells at $[illegible] equipped with Edison battery for $[illegible] to $[illegible] and as fitted with Edison battery good for 100 to [illegible] miles sells at $2,600. Battery is underslung and suspended from three points on the cross members of the main frame. Main frame made of steel the side members being dropped towards the center. The vehicle seat 44 inches wide with ample accommodations for three people. Car can be equipped with wheel or lever steer, in each case the control being located at the top of the column much as in the spark lever on a gasoline car. Wheel base is 79 inches and tread 54 inches. Motor is of high efficiency type and suspended from three points on the cross members of the main frame. Drive is through Morse silent chain to countershaft. Final drive is through double roller side chains.

the body of the car is virtually placed between the forward and rear wheels much as in the more advanced gas car practice. That such a location of the body makes for easy riding is certain.

The Motor.

The motor of the Bailey electric victoria-phaeton is of a special design either 48 or 60 volts, depending upon the model and of a high efficiency. In this respect light weight has been sacrificed for durability, great strength being had where it is needed. The motor is suspended from the frame at three points between the cross members of the main frame or chassis, and is carried well back in such a way as to evenly distribute the weight. This permits of ample storage space under the front seat, a minor provision perhaps, yet one appreciated by the owner.

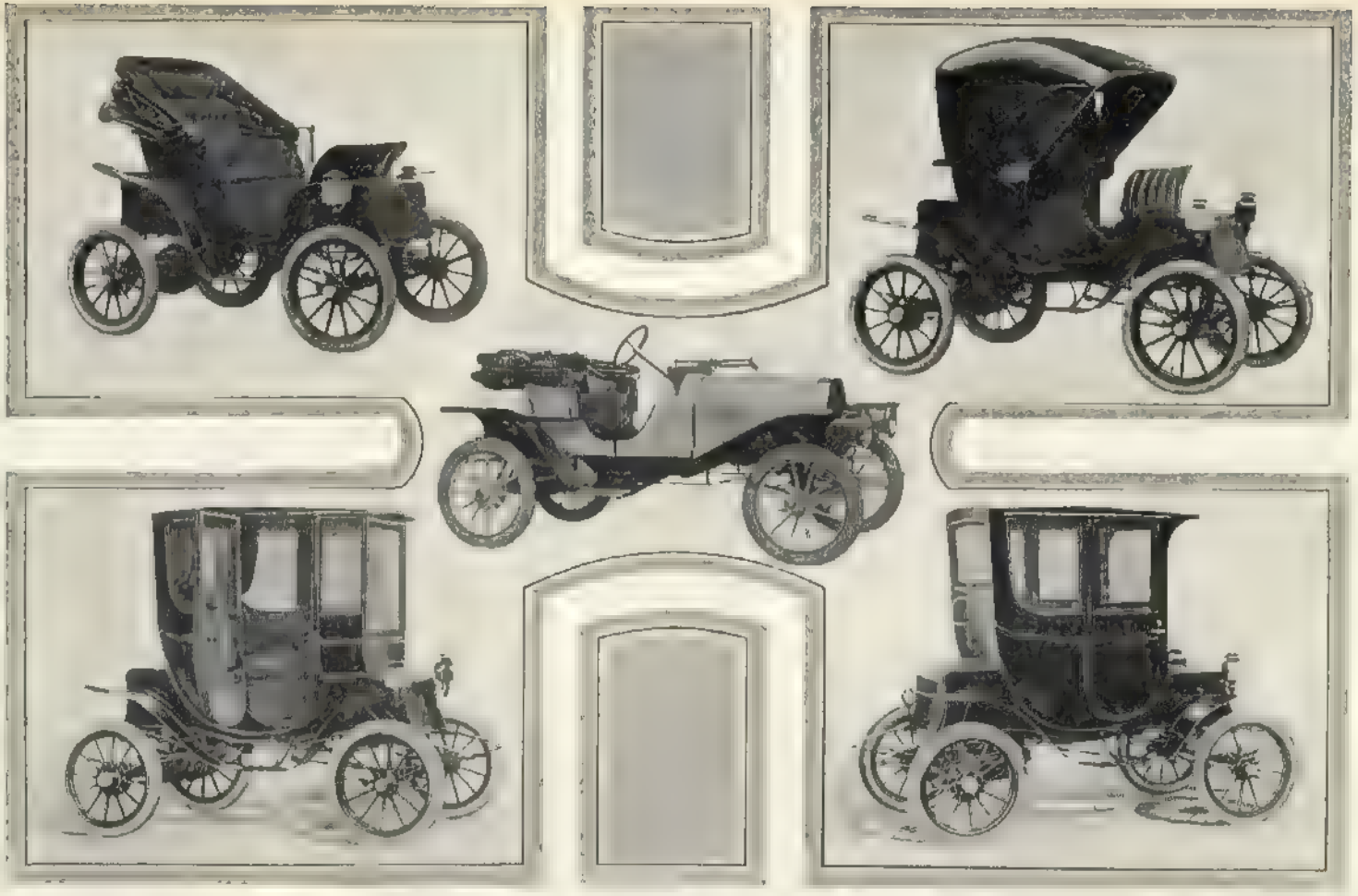
Drive and Axles.

Drive is through a Morse silent chain to a countershaft and from thence to the sprockets on the rear wheels through roller chains. The sprockets are large and accurately cut ensuring smooth and quiet action. The double side chains are guarded at the entrance of the vehicle, being neatly housed. The axles are of the so called Bailey pivot type designed for long life.

Wheel base is 79 inches and the tread 54 inches. The wheels are of chariot style artillery type of improved design. The absence of the wooden rims helps also to keep the weight down. The spokes are of different style than usually seen on artillery equipment and add to the appearance of the wheels

Underslung Batteries.

The underslung battery on many cars is used with good results to the exclusion of other types. The Bailey equipment is of this type. It is suspended from the cross members of the frame at three points. The battery is of Exide type, good for 40 to 50 miles of service though the car is designed to take the Edison battery and the makers claim that under ordinary conditions, that is, good roads, it will run 100 miles on one charge if using the Edison battery. The normal charging rate of the Edison battery is said to be about twice that of ordinary types and it can be partially charged at about four times the rate of an ordinary lead battery. Another good feature of this Edison battery according to the builders of the Bailey car is that the vehicle may be left discharged for any reasonable length of time without serious injury resulting, which cannot be said of other forms. The Edison battery as used is in solid welded steel cans and the plates are steel, the



Characteristic Group of 1910 Waverly Models

In the center is shown the Model 78 Gentleman's Roadster of gasoline [illegible] type fitted with series wound type H motor and 32 cell 11 plate battery, price $1700. In the upper left corner is shown the Model 70 C two passenger coupe and in the lower left hand corner is the Model 67 Victoria Phaeton, in the lower right hand corner the Model 7-C Brougham and in the upper right hand corner is the Model 70 B Victoria Phaeton. The chassis specifications of these vehicles are more or less alike the special features of the Waverly chassis being given in detail in the text.

By G. L. S.

So many points of excellence are incorporated in the current offerings of the Waverly Company, Indianapolis, Ind., that it is a trifle difficult to select any single feature as worthy of special mention. Following out the progressive policy so consistently pursued from the outset, the Waverly line this year marks further advancement in the realm of electric vehicles. Added importance is given the 1910 output through the appearance of a roadster the lines of which make it scarcely distinguishable from the ordinary gasoline roadster.

Interest in an electric car naturally centers in the power plant and transmission, owing to the somewhat limited radius and need of careful application of correct mechanical principles if maximum efficiency is to be attained. The Waverly is especially noteworthy owing to the use of a special design transverse shaft drive which differs materially from that employed on other electric carriages. Power from the motor is transmitted to a floating rear axle by means of a flexible gear, a shaft parallel with the axle, and a small herring bone gear on the rear axle. The flexible gear runs on a gear cut sprocket, is enclosed in a dustproof case, travels through a continuous bath of oil, and operates a shaft floating between the springs parallel with the axle and fitted with universal joints, the longitudinal movement in these joints being taken up by rollers hardened and ground and acting on surfaces similarly treated.

Rear Axle Construction

The construction of driving axle and differential is such that no load is carried on the former nor is there any end thrust on the latter, power being transmitted to the hubs by means of a clutch at the outer end. Accessibility is a notable point in this connection, the driving axle being removable by merely pulling it out after a dust cap has been taken off. This in turn allows the differential case, driving gears and pinions to be removed from the axle frame by merely taking off a case cap, when every part can be disassembled, inspected and put together again with very little work.

The rear axle is of floating type, being made by swedging and up-setting tubing in dies so as to give an extra heavy wall at the point where the diameter of the tubing is reduced for the wheel bearings. This provides a solid one-piece tube, and does away with the necessity of brazing the spindles on.

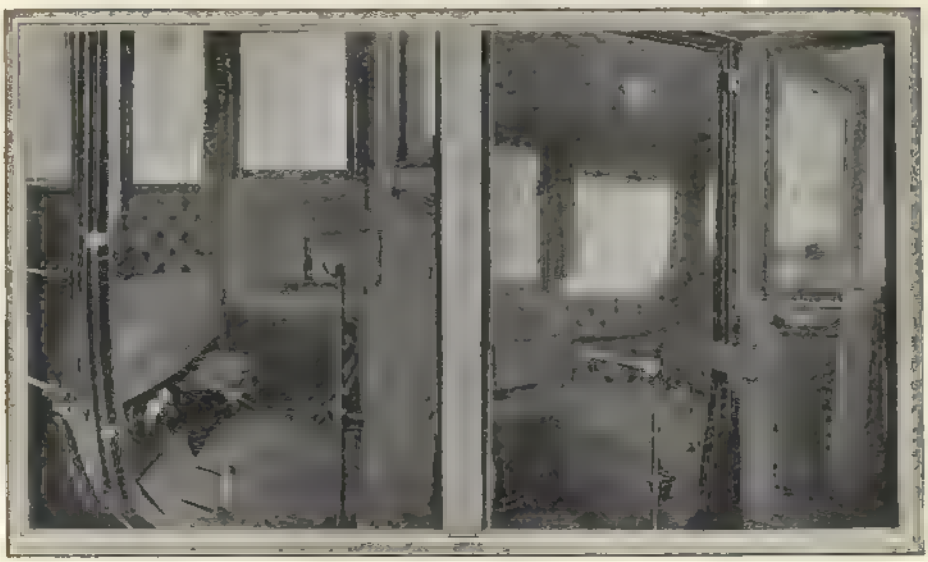
A universal shaft of special design and construction is employed, with pins and rollers made of special steel and ground to micrometrical accuracy.

Accessibility

Both motor and flexible gear cases are combined in a single unit and assembled on cross pieces attached to the chassis frame as shown in an accompanying line drawing. Here again accessibility is in evidence. The entire unit may be disconnected by removing a locking set screw in the universal joint, thus permitting the sleeve to be slipped from the joint and the universal shaft to be taken out. With this done the motor can be dropped by removing two supporting rods which connect the field frame to the motor support, the procedure being simplified to a degree that must appeal alike to the owner and the garage man.

The Waverly Motor

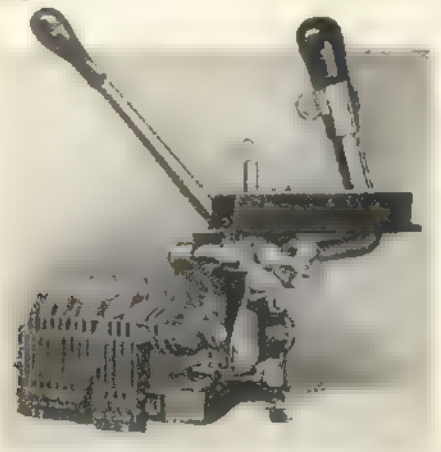
The Waverly motor is straight series wound, unusual strength of parts and great overload capacity being among the distinguishing features. Large annular bearings are used throughout, and the commutator



Two Interesting Interior Views.

Fig. 1. The above illustrations show the interior of the Model 75-C, four passenger brougham. At the left is shown a view of the front seat and the disappearing auxiliary seat, control pedals, volt and ammeter; the front seat is upholstered in cloth, while the rear seat is in broadcloth. The view at the right shows this seat and the steering and control lever, note the arm rests, card case, dome light, umbrella rack on the ceiling, etc.

surface is uncommonly liberal. End brackets are of aluminum and the field ring is of drop forged high grade iron. Armature laminations are of No. 28 gauge iron, selected because of its exceptional magnetic qualities, and the pole pieces are also laminated. The armature has seventy coils of two turns each, the breaking up of the armature winding into a large number of sections with a small number of turns to each insuring good commutation under all conditions. Armature coils are wound flat and then pulled to shape in such a manner that a maximum of copper is obtained in a minimum space



Knife Switch Controller

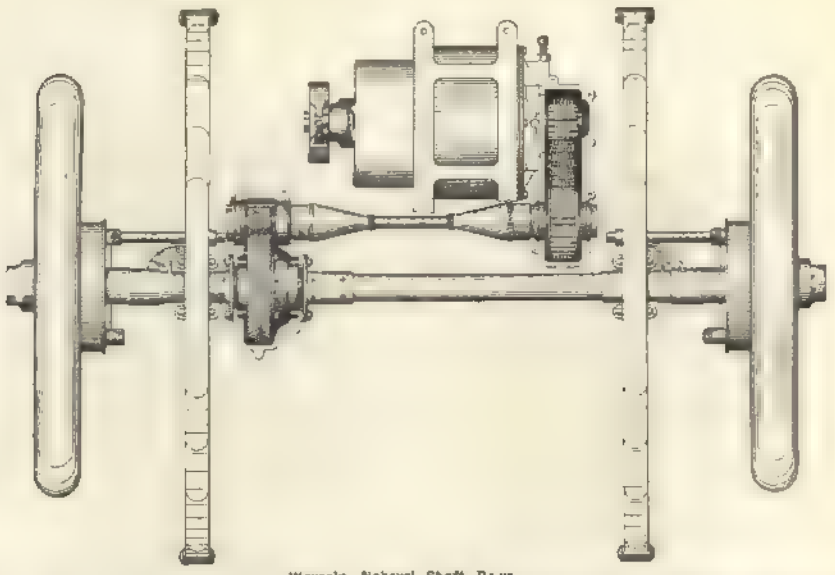
Fig. 2. The controller is somewhat of a departure as the contacts are of the knife blade type, the knife blades consisting of brass, so arranged as to engage two piece phosphor bronze fingers mounted on the frame of the controller, the engagement being such that the contact is not broken while passing from one speed to another giving continuous torque at the motor

The motor has six poles to save weight. Electrically it has been improved by using a specially selected metal which is rolled for the Waverly Company at the mill and forged into rings in the company's shops. The magnetic qualities of this metal, as well as the carefully selected soft iron laminated core and pole pieces, are important factors in producing the high efficiency claimed for the Waverly motor, which is given as 84 per cent. Carefully proportioned winding is also an aid in giving a very steep torque curve and a very flat efficiency curve, the makers calling attention to the fact that the increase of torque in one these motors is about 3.6 times for 100 per cent. overload as against something like 2.5 times per 100 per cent. for the ordinary street railway motor, while the torque curve is steeper than that of other motors used on electric automobiles, insuring a minimum increase of current consumption on hills and heavy roads and increasing the battery and motor efficiency and mileage proportionately. The brush holders have also been improved in such a manner as to give constant contact, thus eliminating liability to spark or clog with carbon dust.

The motor used on the roadster is new in several respects, chief among these being the annular bearings, two brush holder sets, wide commutator and full aluminum end brackets both right and left.

Knife-Blade Switches on Controller

Departure from the beaten path followed by electric vehicle makers is again evident in the controller, which uses the knife-blade contact system, by means of which the circuit is not broken when passing from one speed to another. The controller proper consists of a core on which are assembled brass



Waverly Nobevel Shaft Drive

Fig. 3. This assembly drawing shows the construction of the [illegible] axle differential and the method of transmitting the power from the motor through a side [illegible] which is enclosed [illegible] The universal shaft is of special design and made of special steel [illegible] or cross screws at each end, so the chassis frame that the entire unit may be disconnected by removing a locking set screw in one of the universal joints

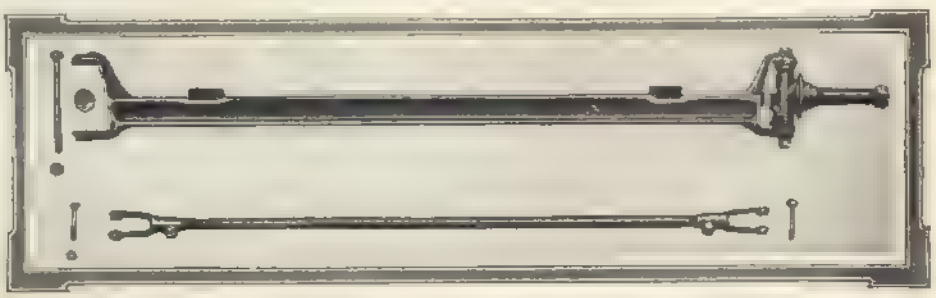
blades of varying widths and locations which engage phosphor bronze two-piece fingers mounted on the frame of the controller. The liberal area of this knife-blade contact insures unbroken connection after power is once applied no matter how often the speed may be changed, contact on one speed being maintained until connection is effected with the next. This patented feature gives a continuous torque to the motor and prevents any jerk or arcing between the speed notches. Speed control is regulated by four notches, the first two being resistance, with the motor field in series, and the third and fourth with the motor field in series and multiplex respectively, battery cells being in series at all times. Four reverse speeds are provided, corresponding to the forwards

Controller Interlocking Device

The manner of working out an interlocking device on the controller is ingenious, and of the utmost value to the driver. The speed direction of a Waverly cannot be changed with the power on. If for any reason the controller should become inoperative while the handle was left on a speed notch the reverse lever handle can be brought back to neutral position and the car will not become active again until the handle of the speed lever is brought back to neutral and power is again applied in the regular manner. With the new controller the emergency key is fitted in the top of the reverse lever and serves to mechanically unlock the position of the reverse lever switch. This reverse switch has three positions—forward, neutral and backward. In the neutral position a tongue automotically engages the fixed part of the controller frame, while the key serves the purpose of disengaging this tongue, thus allowing the reverse switch to make the electrical connections for either forward or backward motion, and doing away with a plug switch.

Improved Internal Brake.

Taking full cognizance of the need of ample safety devices, an improved internal expanding brake is being furnished this season. This consists of two separate shoes pivoted and floating on a single pin instead of on two pins, as in the earlier designs, giving greatly increased action, inasmuch as



Front Axle

Fig. 4. This axle is of Elliott type and made from a solid one piece open hearth drop forging of I-section, the wheels run on Timken bearings. The transverse or cross connecting link of the steering gear is also shown

the contact surface is more than that found on many gasoline cars. A contracting band brake also operates on the motor shaft

Batteries are Exide, Waverly or National, as preferred, ranging from 30 cells and 9 plates, in the runabout to 35 cells with 11 or 13 plates in the surrey. Location of the batteries is dependent upon the type of car, of which there is a sufficient variety to meet the demands of the most exacting

The front axle is of Elliott type, a solid one-piece, open hearth drop forging of I-beam section, made in the company's shop, and of a particularly efficient design. Wheel bearings are Timken roller, and in the casings six Hess-Bright ball bearings are used on the gear and pinion shafts, all of which are fully enclosed and protected from dust and other foreign matters.

The same careful attention to detail in finish and appointments that has always marked Waverly cars is still in evidence and the current line stands forth conspicuously among electric vehicle offerings for 1910.

The Columbia Electrics for 1910

BY C. E. MORRIS.

During the past few years much has been heard from time to time regarding the marvelous development that has marked the gas car, so called. Yet but comparatively few ever stop to consider that much thought has likewise been devoted by motoring engineers to the perfection of that smoothest operating of all vehicles, the light electric. Electric cars in certain instances, are among the oldest self-propelled vehicles in this country, a case in point being that of the product of the Columbia Motor Car Company, of Hartford, Conn., the successors of the Electric Vehicle Company. Notwithstanding all the wonderful improvements in gasoline vehicles the light electric, as we see it to-day, is one of the most desirable vehicles for its particular class of service. It is in a class by itself, it fills certain wants that cannot be approached by a gas driven car, a broad statement no doubt, but none the less true, however. The following text is devoted to a description of the Columbia light electrics, as well as the larger and more luxurious coach type of vehicles. The predecessors in business of the Columbia Motor Car Company, the Electric Vehicle Company and the Columbia & Electric Vehicle Company, all of Hartford, Conn., were about the first of American manufacturers to take up electrically propelled road vehicles, the engineers of that concern in the old days rather looking to electricity as the most acceptable power agent for such a purpose. The Columbia electric, then, passed from one stage of evolution to another in the natural course of events so that as seen on the road today, it has behind it fifteen years of conscientious endeavor to produce the best.

For 1910 the Columbia Motor Car Company, of Hartford, Conn., market two distinct electric models, the Mark 70, Lot 2, so called, which is the perpetuation and refinement of the light Victoria phaeton of the year previous. This vehicle is designed as a two passenger town vehicle, and judging by conditions in Hartford, the home of the car, it is indeed a popular conveyance especially with the fair sex who have many calls to make, little shopping expeditions and all that sort of thing to which the gentler sex are given. It is a 24 cell Exide vehicle and sufficiently speedy for all practical demands of city service where one has numerous stops to make and where high speed or, perhaps more properly put, an ordinary road speed could not be tolerated because of the danger involved. While this vehicle is ideal for city use it is also most useful in suburban driving where a larger car is not desired

The running gear of the Mark 70, Lot 2 Columbia Electric Victoria phaeton is of the so called reachless type and is very flexible allowing for uneven road strains. But one motor is used and this is suspended from the body thus having the full benefit of the body spring suspension. A single chain enclosed in a leather boot is used for the final drive to the rear axle which with the differential assembly is built of the best grade of alloy steel thoroughly treated to ensure long life and ability to withstand strains peculiar to the electric type of road vehicle. The motor is of General Electric make, 48 volts and is series wound. It is fully protected from the elements.

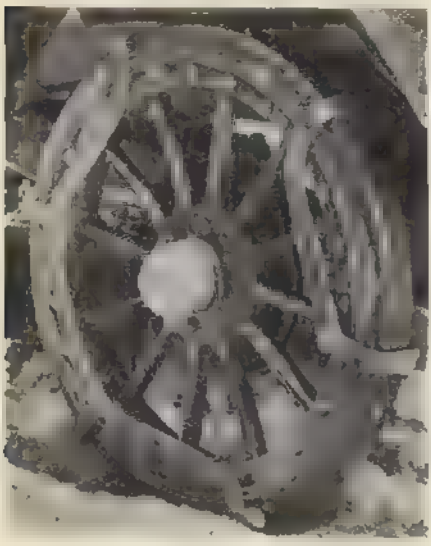
Motor and Controller.

While electric motors as applied to road vehicle propulsion are not ordinarily rated as regards horse power, the Columbia Electric Victoria phaeton equipment is rated 3.5 H. P., fully capable of caring for all demands of speed and travel and yet withal good for a considerable overload without serious results as is often the case in electrical equipment. The controller is a horizontal member, a General Electric product of the six point type providing a continuous torque and giving six speeds forward and three reverse. In the reverse there is ample provision for getting out of a rut or a depression, so to speak, where more or less power is necessary to move the car. Motor bearings are of the latest accepted standard type, that is imported Hess-Bright annular ball. The various speeds on the controller are goverened by a side hand lever which is located at the left side of the

THE "LYON" NON-SKID SOLID TIRE GRIP

The users of motor vehicles have been educated to apply non-skid chains, etc, loose, in order that they will creep circumferentially around the tire. This, it is claimed, is not good from a traction point of view, but has always been made necessary to avoid the cutting of the tires by the device

The Lyon-non-skid solid tire grips cannot cut the tires, it is claimed, and consequently are made to cling firmly to the tire, giving perfect traction.



The "Lyon" Non-Skid Tire as it appears ready for service

It can be adjusted without jacking or backing up the car, and is claimed to last longer than a chain due to the fact that centrifugal force cannot cause the treads to strike the road in front of the traction point. With this skid very little clearance is necessary between the wheel and drive chain.

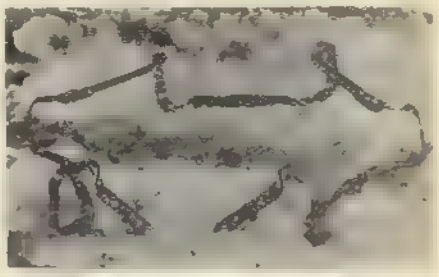
The Lyon grip is made in two principal parts, each of these consisting of one piece with one tread member, and one piece with two tread members. These are joined by a riveted swing connection enabling them to be folded up and packed in a small space Hooks and plates are attached to each end of the two principal parts to form bolted connections

In applying, each of the two parts are unfolded, and the pieces with the single tread member connected together by bolting the plates

They are then slipped over the tire with the connection inside at the top, bringing the riveted swing joints on the outside. In case it is impossible to do this, both connections can be made after the members are applied to each side of the wheel The second connection is then made by bringing the plates together at the bottom, using a hammer if necessary, and pulling with tool until the tension is secured, and then fastening with bolts and lock nuts.

One bolt may be used or two, as required by the tire. On a new tire, it may be possible to join the parts with one bolt only Several holes are provided in each plate so that adjustment can be made as wear occurs in the tire

If the grip is required at the smallest connection, the connecting plates should be crossed over one another and one bolt used through the inner hole



A Lyon Non-Skid Grip as it appears when applied to the tire, showing flexible connection at the plate

The grip is constructed entirely of chrome nickel steel, combining great durability and lightness.

The Lyon Non-Skid Solid Tire Grip is made by the Lyon Non-Skid Company, 435 North Broad street, Philadelphia, Pa. It is made for all size wheels from 28x2½ to 42x3; also for dual tires for which 50 per cent. extra is charged

The Racine Manufacturing Co., of Racine, Wis., informs us that although it recently sustained the loss of one of its factory buildings by fire, it has equipped a new factory building which was completed just prior to the fire, and has resumed operations in practically the same proportions as before.

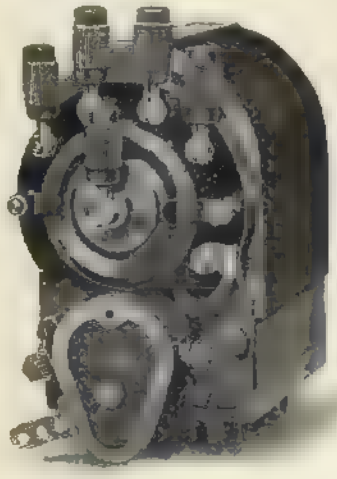
The Livingston Radiator Co., 6 East 31st street, New York City, has recently changed its name to the El Arco Radiator Company. E. R. Hewitt and R. C. Gildersleeve, proprietors, who have been engaged for some years past in the manufacture of Livingston Radiators, have ceased to manufacture the same and have been building the El Arco for some months past, and in order to identify themselves with their new product have decided to change their trade name

Be sure not to miss the April issue of this Journal—it will be a special number, entitled the "Special Electric Vehicle Number," and devoted principally to descriptions of electric vehicles and their accessories

THE 1910 "REMY" LINE

For the coming season the Remy Electric Company, of Anderson, Ind., is making two standard types of its well-known magneto. Type "T" has been developed for use on two cylinder and four cylinder cars having small motor. It has four magnets in two parts and is a compactly built machine requiring little space for installation.

Type "S" illustrated herewith is the Remy Co.'s latest product, and is known as the standard machine for 1910. The chief differentiating feature of the 1910 Remy Magneto are improvements to permit of still greater simplification, so that it can be more easily understood by those who do



The "Remy" High Tension Alternating Current Magneto type "S"

not care to devote much study to such parts of their cars. A hotter spark and a greater timing range are found in the new magneto, together with refinement in appearance. The type "S" magneto is built for two, four and six cylinder motors.

The magneto is of the patented inductor type, in which the armature winding is stationary, and from which winding two wires are led, one directly to the coil and the other to the circuit breaker, doing away with the brushes and delicate parts. The rotary part of the magneto consists of two drop forged steel wings or inductors mounted on a steel shaft, which parts are rotated between the pole pieces of the U-shaped permanent magnets

The revolving inductors generate one wave of alternating current twice during each revolution in the stationary winding which rests between the inductors. The current is carried through the circuit breaking box over the low tension cable to the non-vibrating transformer, coil on the dash board. In this stepup transformer, especially adapted for use with the magneto, the current is jumped up to the high voltage necessary and is conducted back over the high tension cable to the distributor on the face of the magneto. From there it is distributed to the spark plugs.

A dual system of ignition on one set of spark plugs is allowed, as batteries may be wired through the same transformer without complication. The transformer is furnished with a two-point switch used to switch from battery to magneto or vice versa, or disconnect from either to stop the motor. The switch is also provided with a push button for starting the motor from the spark without cranking when the switch is turned on the battery. The motor always stops with the magneto in position to deliver a spark in the cylinder under compression and a battery using the same magneto distributor, furnishes an intensely hot spark which will start the motor providing compression of the charge is retained

On the end of the distributor shaft which sits above the inductor shaft is a brass segment, which receives the high tension current and revolves past the terminals of the wires (four or six)) leading to the spark plugs. There is a line on this brass, fan-shaped segment, and when installing the magneto it is necessary to get this line to register with the terminal of the wire leading to the cylinder on top dead center just beginning on the working stroke, then wire up the spark plugs in firing order of the engine.

The inductor wings on the 1910 Remy Magneto are larger than those in the 1909 model and the current induced is more powerful and each impulse is of longer duration, permitting larger timing range for advance and retard of spark. The magnets are of the finest magnet steel and are practically indestructible.

THE "ANTI-JOY-RIDE-LOCK

Leon Ottinger, 31 Nassau street, New York, has just placed on the market a new locking device. With this device on the dash, the auto cannot be started, or any of the parts tampered with by anyone but the holder of the key. This, of course, immediately places the responsibility for unauthorized use of the car, or any damage done to it. This device not only locks the ignition, but also automatically locks the hood and in this respect it differs from all other devices of this kind. It can also be arranged to lock any part desired. The lock itself is a Yale. The turning of the key in the lock accomplishes several results; for instance, it is so arranged that the hood is locked and the ignition on; this being the running conditions. In another position the hood is unlocked with the ignition on, and in another position, the hood is locked and the ignition is cut off. The locking of the hood is accomplished by means of cams which operate special bell crank levers, the ends of which pull small

Boston Automobile Show

The Eighth Annual Automobile Show under the auspices of the Boston Automobile Dealers' Association and under the direct management of Chester I. Campbell, took place March 5th to 12th in Mechanics Bldg. There were 238 gasoline pleasure cars exhibited, of which five were air-cooled six of the two cycle type, and seven were equipped with horizontal engines. Added to this were 12 electric cars, and six steam cars, making a total of 256 pleasure cars There were 62 commercial vehicles exhibited, of which seven were electrics. There were 41 gasoline and one electric chassis on exhibition while the 47 motorcycles and two bicycles completed the exhibits, of which there were in all, 409

Fig. 1. General View Boston Show.

The decorations were of such nature and so arranged as to produce the effect of a New England spring scene. Entering Exhibition Hall, the visitors were confronted by a reproduction of a New England apple orchard. The columns of the hall were cov-

Fig. 2. A View of Part of the Apple Orchard.

Fig 3 View of the Stage, in the Main Hall

ered with the bark of apple trees, and near the top limbs were fastened in such a manner as to produce the effect of trees Thousands of apple blossoms hung on the branches, and the resultant effect was that of a Down East apple orchard in blossom. To complete the effect, split rail fences were erected at several places throughout the hall and boxes full of daffodils were distributed at various points. Singing canaries in small wooden cages were perched up in the crotches of the trees. The walls were decorated with bunting to match the foliage and in the centre of Exhibition Hall there was suspended an aeroplane. The balcony, on which the orchestra was located, and where the singers were placed, had been transformed into an arbor, on which vines were thickly entwined.

The display of commercial cars was the largest ever shown at any one show in this country. The best previous exhibit was at the Chicago 1907 show where 57 cars were shown. This number was exceeded at Boston this year by five, there being 62 commercial vehicles and chassis on exhibition

There were many new features in the accessory exhibit, including tire attachments, lamp attachments, ignition specialties, speedometers and clocks.

Fig 4. General View of Tire Exhibit.

The New Carhartt Cars

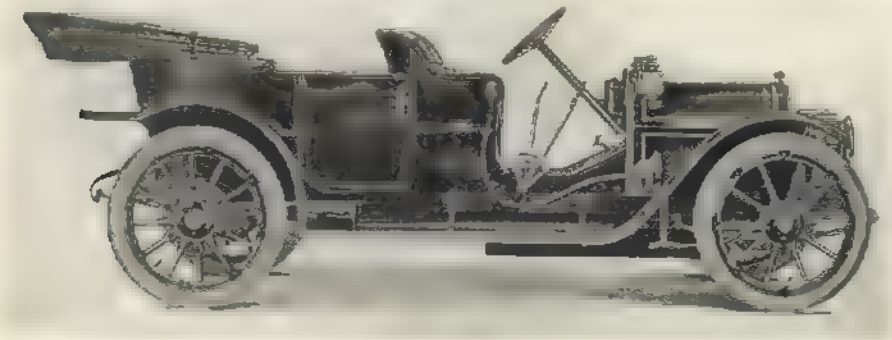
BY S. L. G.

Interest always attaches to the personnel of a new company as indicating in a measure what may be expected of it in the field it elects to enter. Judged by past performances and present prospects, the advent at Detroit of the Carhartt Automobile Corporation is a matter of more than passing moment, this recent accession to the ranks of automobile makers in the automobile city promising to make its presence felt in many quarters.

The new company is incorporated under the laws of New York, with a capital stock of $500,000, of which $300,000 is common and $200,000 preferred. Mr. Hamilton Carhartt is president, and Mr. Hamilton Carhartt, Jr., vice-president and general manager, the latter having relinquished the position of vice-president and general manager of Hamilton Carhartt, manufacturer, of Detroit and Toronto, to devote all his time to this new enterprise. Ralph Garfield Lewis, an eastern man of long and ripe experience in the automobile business, is secretary and will have charge of the mechanical department.

The company's executive offices are at present at No. 902 Union Trust Building, Detroit. A factory site has been secured at 1524-1534 Jefferson avenue, and it is announced that regular deliveries will begin August 1.

The Carhartt car will be medium priced, listing at $2250. Only the highest grades of material it is claimed are employed, supervision is most exacting, and a critical examination reveals many points that commend it to the seasoned motorist.



Carhartt Car

Fig. 1. Carhartt touring car motor, water cooled, 4 cylinders, 4½ x 4½, 35 H. P., self-contained lubrication, dual ignition by Bosch magneto and storage batteries, selective sliding change gear, shaft drive, wheel base 118 and 34 in. wheels with 4 in. tires on Q. D. rims

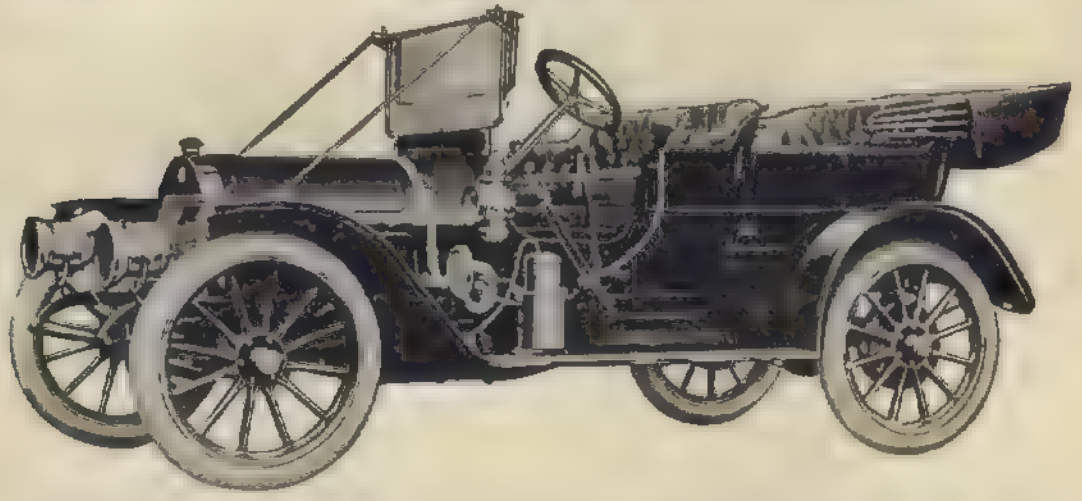
The Motor

The motor is a pleasing example of simplicity and compactness while accessibility has been taken into account by the designer, all the details involved having been worked out in a manner that should insure efficient service under the most exacting conditions. It is of water cooled four cylinder vertical type, with a 4¼ inch bore and 4½ inch stroke, developing 35 brake horsepower at 1,000 r. p. m., and is self-oiling. Cylinders are cast in pairs, with integral valve chambers and water jackets, the latter being of sufficient size to provide ample cooling. Best quality reverberatory furnace gray iron is used for cylinder, piston and piston ring castings, the cylinders being tested under hydraulic pressure before and after machining. Both cylinders and pistons are accurately fitted and finished by grinding to absolute size, and are interchangeable. The latter are fitted with four eccentric expansion rings turned and ground on the bearing surfaces, and when finally assembled cylinders, pistons and rings are lapped. Valves are all located on one side of the motor, automatically operated from a single camshaft, and are absolutely interchangeable, standardization being a point to which attention is called by the makers. They are made with nickel steel heads electrically welded to carbon steel stems. The camshaft and cams are forged integral, heat treated and accurately ground, lubricated from oil pockets and enclosed within the crank case. Care has been taken to guard the camshaft, magneto and water pump gears from dust or other foreign matters, they being contained in a separate but integrally cast oil tight crank case extension so devised that all are assured uniform lubrication.

Crank Case

The crank case is in two horizontal sections, moulded from special aluminum alloy and liberally webbed to insure maximum strength. The engine base is formed by the upper setion, which retains the crank shaft bearings and is securely anchored to the

This is the Reo Four-cylinder Roadster, $1250—the only car that really won the New York-to-Atlanta reliability contest.



That's what you want to know—which car really proved itself the best?

Twenty-six cars got perfect scores, but you don't want twenty-six cars; you want one car and you want the best *one*

Here's how the Reo proved itself the best of the thirty-eight cars which competed.

When the contest was over, R M Owen issued a public challenge to all the other perfect-score cars, to submit themselves to an exhaustive and rigid examination, the examiners and judges to be Mr Winthrop E Scarritt, referee of the contest, and the technical committee which checked the cars out at the start. The findings of this committee were to be final and their report made public through the press of the United States.

This committee was to examine every car that finished with a perfect score, charge it with any repairs or replacements that were made en route, or with any that might be necessary to restore each car to perfect condition, and the car which suffered the least penalties under this examination was to be named the real winner of the contest

What was the result?

A lot of discontent among the challenged cars, but not a single one took up the challenge

Why? The competitors of the Reo were willing enough to make the run under the rules of the contest—which were fairly easy— because they thought there was a very good chance of getting through, but those who saw how the Reo acted during the run, and how it looked at the end of every day's run, realized that they hadn't a ghost of a show Therefore, it was announced that no car had accepted the Reo challenge.

Of course, under the rules the Reo was not the only car with a clean score, but every man who has dollars to pay for a car can make up his own mind which car proved itself the best, and every intelligent American, whatever car he owns, must admit that the confidence of the Reo in accepting this challenge, and lack of confidence of the other cars in not accepting it, are conclusive evidence that the Reo was the real winner of this contest.

The Reo has been built for five years, and all that time (whether 1-cylinder, 2-cylinder or 4-cylinder it has proved in every endurance contest and in private use, its get-there-and-back ability. It has entered public contests against cars of all prices up to $6500, and in every case has been the lowest priced car receiving a perfect score. It has never asked for favors, or allowances on account of price or class, and particularly in this last challenge it has stated most clearly that it will stand on its own merits without regard to price

This is no accident or happy chance. It is not dependent upon any particular invention or device, but upon that thorough perfection of material, and workmanship, and design which is only possible in a car at such a price by taking advantage of all the modern business and factory methods of making and selling.

It seems queer to say it—but it is so—there was no car on the run, and there is no car in the world at any price or horse-power which will give the motorist more of what a motorist wants than this $1250 Reo—unless the motorist wants a great, big, heavy car, with its discomforts on rough roads and very uncomfortable expense bills.

Send for the Reo catalogue, also "Number 31," the story of New York to Atlanta.

R M Owen & Co Lansing Mich Gen'l Sales Ag'ts for the Reo Motor Car Co

Members of the Association of Licensed Automobile Manufacturers. Licensed under Selden Patent.

See our exhibit at the Grand Central Palace Show, New York. Opens New Year's Eve.

THE

ACORN

Commercial Car

"BUILT IN THE HILLS"

Every car is tested with an overload over Cincinnati hills before shipment.

This means that it will give satisfaction anywhere.

It has the power, it is built to wear and it will wear

ANY STYLE BODY BUILT TO ORDER

The dealer who secures the agency for a good, light delivery car has made his fortune. Write for full information.

THE ACORN MOTOR CAR CO.

FIFTH, EGGLESTON AVENUE AND LOCK STREET

CINCINNATI, OHIO

CRAWFORD CARS

FOR 1910

TWO OF OUR MODELS

Model 10, 24-28 H. P.
5-Passenger Touring Car, $1350

Model "F-G," 50 H. P.
8-Passenger Touring Car
Price, $3500; with Limousine Body $4500

IMPORTANT TO DEALERS

There's a lot of satisfaction in selling a car you can stand back of—a car whose endurance and serviceability have given it a prestige which makes sales easy Such is the CRAWFORD, always good automobile value, but for 1910 better than ever.

Active Agents Wanted for Chicago and Surrounding Territory. Catalog on Request.

Crawford Automobile Company

HAGERSTOWN, MARYLAND

This Is One Of the Cars

which proved to be the big sensation of the New York Show, and which are equally sure to be the sensation of the Chicago Show. Don't miss seeing them. They are the only electrics exhibited which have Bevel Gear Shaft Drive; the only electrics without radius and torsion rods; the only electrics with centered wheel bearings; the only electrics with an absolutely safe and dependable controller; the only electrics with a motor that will run an entire season without attention, and that will stand the heaviest overloads without sparking or blackening the commutator.

These cars are the new

Bevel Gear Shaft Drive

Baker Electrics

—the cars that have more exclusive features of real merit, than all other electrics put together. They go farthest and fastest on a battery charge because they are built right, and they **sell** easiest because **the public knows** that the BAKER name is a guarantee of absolute reliability and satisfactory service.

Write for Handsome Catalog and New Line Proposition.

The Baker Motor Vehicle Co.

35 West 80th St., Cleveland, Ohio, U. S. A.

The Largest and Oldest Manufacturers of Electric Motor Cars in the World.

National

$2,500 **"40"**

Costly Construction

EVERYBODY "in the know" of the Automobile recognizes this as the big bargain of the year. Not a little car with a big rating, but a big car with a low rating. Think of it! A big car with cylinders 5x5½, with 36" wheels, with a wheel-base of 124 inches, with Bosch magneto and storage battery, with the finest materials and workmanship in the world throughout at **$2,500!** A car that beats a mile a minute on circular tracks—a car that is big, powerful, luxurious and capable in the highest degree for such a price! It's the best value of the year.

PARTIAL SPECIFICATIONS

Motor—Four cylinder, 5x5 11-16 inches vertical, cast in pairs. Water-cooled; centrifugal pump. **Clutch**—Self-contained aluminum, cone leather faced, spring cushioned. **Transmission**—Sliding gear, selective type. Three speeds forward and reverse. **Wheel base**—124 inches. **Drive**—Bevel gear, through propeller shaft. **Oiling**—Crank case, constant level force feed oiler, oiling all working parts of motor. **Ignition**—Two separate complete systems. One a gear-driven, high-tension Bosch magneto. The other a storage battery, single coil and distributor. Each system has a separate set of spark plugs. **Tires**—36x4. **Gasoline Capacity**—20 gallons. **Brakes**—Two systems. Two internal expanding metal to metal hub brakes and two hand brakes on outside of rear wheel drums. **Front Axle**—I-beam steel forging. **Rear Axle**—Compound construction: inner axle used only as a driver. **Body**—Straight line. Carrying capacity, five passengers. **Springs**—Half elliptic, 40-inch front under frame, 48-inch rear, ¾ scroll elliptic. **PRICE, $2,500.**

NATIONAL SIXES

"Fifty"—Six Cylinders, 4½x4¾ -	$4,200
"Sixty"—Six Cylinders, 5x5 - -	$5,000

Type of Body—Touring, Baby Tonneau or Roadster—optional on all National Cars.

National Motor Vehicle Co.

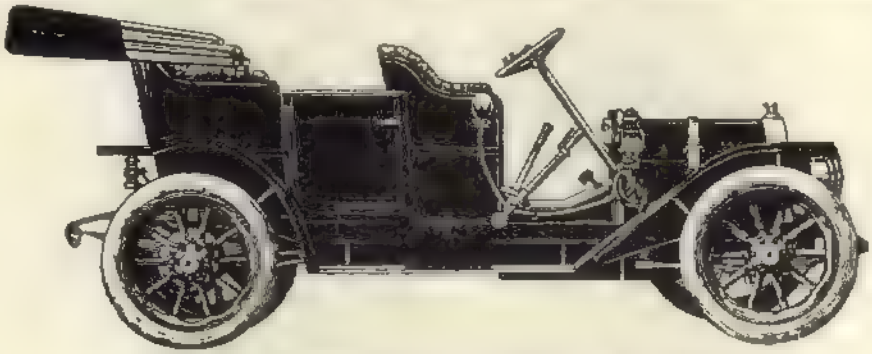
1003 East 22nd St., Indianapolis, Ind.

The Bergdoll Car

IS SOLD WITH A

Perpetual Guarantee

What better evidence can we give you of quality, of material and workmanship? Do you know of any other car giving you such a guarantee?



1911 Bergdoll "30," $1500

(Ready July 1st.)

CHANGES IN SPECIFICATIONS: Cellular Radiator, Q. D. Demountable Rims, Pressed Steel Rear Axle (full floating type), Atwater Kent Ignition System. Extra equipment, comprising Headlights, Bosch Magneto, Prest-O-Lite Gas Tank, $100.

THIS CAR is built by Louis J. Bergdoll, who was determined that the car bearing his name **must** be **right** from tire to top. Profit is a secondary consideration, for the **Bergdoll Car** is built to endure and therefore is a car of quality.

AGENTS who are seeking a moderate priced automobile which will add to their prestige and make for them a lasting and satisfactory business, will find the **Bergdoll** the ideal proposition.

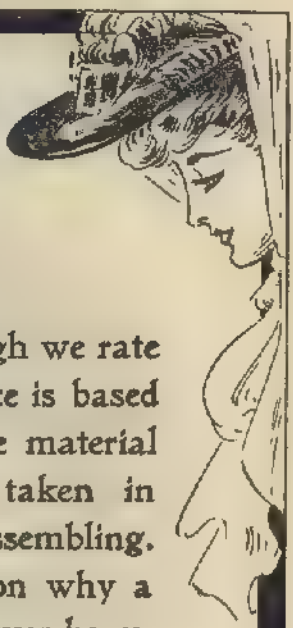
WE ALSO MANUFACTURE Taxicabs and Town Cars

OUR PLANT and equipment is modern and complete, and deliveries will be made according to promise.

Bergdoll Motor Car Company

31st and Dauphin Streets **Philadelphia**

We put the Strength in the Jack so You wont have to.



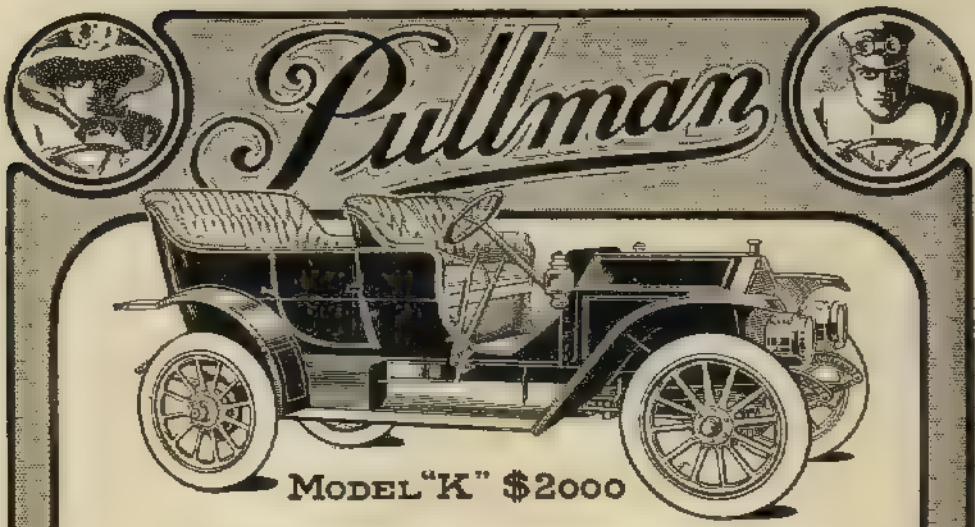
Our Jacks will lift 4000 lbs., although we rate them at only 2000 lbs. Our confidence is based on the knowledge of the material we use, and the care taken in manufacturing and assembling. Theft is the only reason why a Buckeye Jack should ever be replaced.

For further information about Jacks n general, and the Buckeye Jack in particular, write us.

BUCKEYE JACKS

BUCKEYE JACK MFG. CO.

ALLIANCE, OHIO.



The name that stands for luxury. The car that is worthy the name.

"Not Only the Best at the Price, But the Best at Any Price"

PRICES and MODELS:

F. O. B. FACTORY, YORK, PA.

Model "K" —35 H. P. Touring Car or Roadster	$2,000
Model "4-40" 40 H. P. Roadster	3,000
Model "M" —40 H. P. 7-passenger Touring Car	3,500
Model "O" —28 H. P. Toy Tonneau	1,650

Write for Announcement of the 1910 Model "K"

York Motor Car Co., Inc.

Department H, York, Penna.

LOOK UP OUR NEAREST AGENT

There are 112 parts of the

Cadillac "Thirty"

which are accurate to the one-thousandth of an inch

This means that in these 112 parts there is not a variation to exceed one-half the thickness of a hair.

In the assembling of the motors and other essentially accurate parts, the use of files or even emery cloth is not permitted—it is not required.

This is because Cadillac cars are standardized in every detail.

Every part fits exactly in its place. Every part works in perfect harmony with every other part.

It is this thorough standardization that gives the Cadillac that smooth, velvety, noiseless action.

It is this thorough standardization that almost eliminates friction.

It is this thorough standardization that enables the Cadillac motor to develop more power than any motor of its size ever built.

It is this thorough standardization which enables a greater proportion of the motor's power to be delivered to the ground than in any other car the world has ever produced.

It is this thorough standardization which eliminates the twisting, grinding, racking wear characteristic of the car with ill-fitting parts and connections.

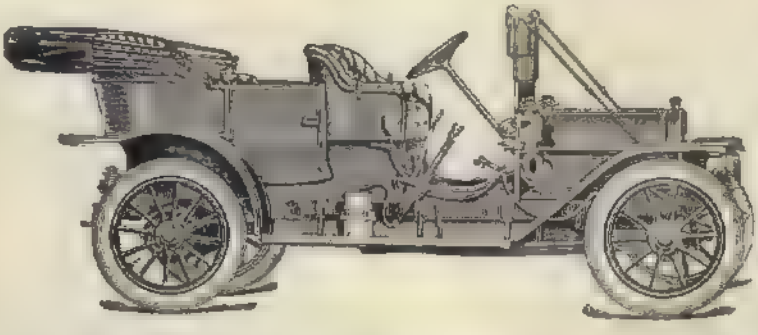
It is this thorough standardization which has caused the Cadillac to be universally recognized as the most durable and longest lived car ever made.

It is this thorough standardization which has eliminated the causes of many of the most vexatious "automobile troubles."

It is this thorough standardization that is back of the Cadillac reputation for being the most economical motor car to operate and maintain.

And lastly, there is no motor car, at any price, so thoroughly standardized as is the Cadillac.

Four cylinder, 30 horse power. Three speed sliding gear transmission.



$1600
(f. o. b. Detroit)

Including the following equipment:—Magneto, four unit coil with dry cells, one pair gas lamps and generator, one pair side oil lamps, one tail lamp, horn, set of tools, pump and tire repair kit, robe rail, tire irons.

Cadillac Motor Car Company : : Detroit, Mich.

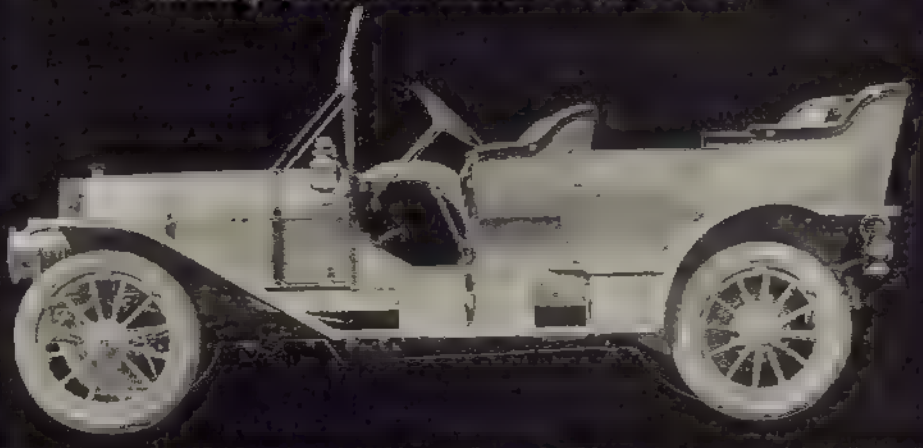
Member Association Licensed Automobile Manufacturers. Licensed under Selden Patent.

Discriminating Motorists everywhere recognize the superiority of the

Great Chadwick Six

the car of exclusiveness

and those automobilists who can afford the best are invariably owners of CHADWICK CARS.



THE 1910 CHADWICK TOURING CAR. PRICE, $5500

IT IS THE KING OF THE ROAD

for distance, speed on the hill or level or through mud. It is always foremost because it is the most powerful and reliable motor car in the world.

May we not send you one of our new catalogs and a book of letters from CHADWICK owners?

The words of praise from men who have bought CHADWICK cars, who are pleased to have their opinions made known publicly, are more eulogistic than we would feel justified in printing in our advertisements.

The CHADWICK construction embodies more original and meritorious features than are contained in any two automobiles made in either Europe or America.

Our Catalog Proves This

TOURING CARS, TOURABOUTS	$5500
LIMOUSINES	$6500
RUNABOUTS	$5500

Chadwick Engineering Works, Pottstown, Pa.

BERGDOLL "30"

TO THE PROSPECTIVE PURCHASER

One of the strongest claims that we make to any prospective purchaser of our car is that we recognize our obligations as only beginning when he contracts for one of our machines.

TOURING CAR, $1500
F. O. B. Philadelphia

Our organization consists of men of ability and wide experience in the manufacture of motor cars. Our President, Mr. Louis J. Bergdoll, needs no introduction to the automobile world. Others in charge of his plant are such well-known men as E. C. Johnson, Philip Malickson, William E. Haupt, C. T. MacDonald and O. A. Bickel.

Our line consists of Touring Cars, Tourabouts, Runabouts, Town Cars and Taxicabs.

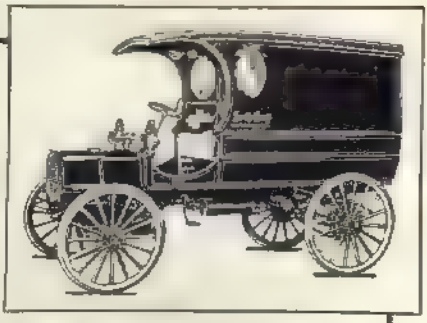
TO THE AGENT

Are you looking for a medium-priced car which will add to your prestige and establish for you a lasting, profitable and satisfactory business? If so, let us send you our proposition.

LOUIS J. BERGDOLL MOTOR CO.

PHILADELPHIA, PA. - - - - - - U. S. A.

We Have "Solved the Delivery Problem" for Smith-Gray Co. of New York



The above company have been using six *Chase* Delivery Wagons for a little over a year.

Mr. Smith says—

"It is a wonderful proposition. Within another year we will not have a horse in our service.

"Our Chase Wagons give us almost no trouble and are very inexpensive to operate. My poorest drivers get fifteen miles from one gallon of gasoline."

You're losing money every day you delay investigating the CHASE WAGON.

The CHASE MOTOR is the practical valveless air-cooled engine which caused the 1910 revolution in air-cooling methods.

Send for free literature.

Chase Motor Truck Company

Dept. C

Syracuse, N. Y., U. S. A.

Hart-Kraft Business Wagons

The most reliable and economical delivery wagon offered for 1910

Actual Experience is Proof of Our Claim

Read the following condensed report of a Hart-Kraft Wagon which was operated from 22nd St., New York City, to Mt. Vernon, Pelham, New Rochelle and return DAILY. The wagon contained two men and the number of packages indicated by the deliveries. Gasoline figured at 15 cents per gallon; oil at 40 cents.

Total miles	71 days,	4014½	Total average one day,	56.5 miles
" deliveries	"	3175	" " "	46 deliveries
" gasoline used	"	317½ gals.	" " "	4½ gallons
" oil used	"	124 pts.	" " "	1¾ pints
" fuel cost	"	$53.83	" " "	$0.76

Fuel Per Mile for Whole Period:

12½ miles per gallon of gasoline **37½ miles per pint of oil**

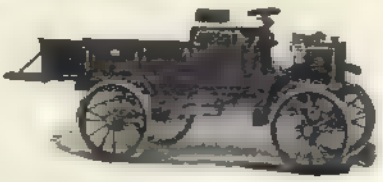
The Hart-Kraft Wagon

Has Unit Power Plant, Magneto Ignition, Timken Bearings, Planetary Gearing, Multiple Disc Clutch, Double Opposed Motor, Water Cooled, Full Elliptic Springs, Double Chain Drive, Solid Tires.

All parts of the Power Plant are easily accessible from the Driver's Seat.

Special Bodies of Selected Design made to suit Customers.

Capacity, 1000 pounds.



HART-KRAFT MOTOR CO.
YORK, PENNA.

THE STRONGEST LIGHT METAL

McADAMITE METAL

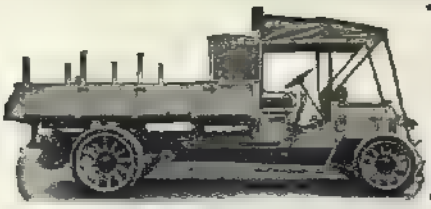
McADAMITE

Specific Gravity 3.20

Tension, 14,000 lbs. per sq. in. Compression, 126,000 lbs. per sq. in.
Transverse, 37,000 Torsion, 60,000

Send for test bar or a pattern for sample casting.

U. S. McADAMITE METAL CO.
13 Rapelye Street BROOKLYN, N. Y.



GASOLENE OR ELECTRIC
Motor Trucks, Delivery Wagons and Passenger Vehicles of all sizes
Imported and American built
The Commercial Motorcar Company, Times Building, New York, N. Y.

Hewitt Trucks
LIGHT DELIVERY
2 Ton 3 Ton 5 Ton
7 Ton 10 Ton
5 Years' Experience
HEWITT MOTOR CO., 10 E. 31st Street, N. Y.

The Autocar
1910 TOURING-CAR, $1750 COMMERCIAL
LIMOUSINE TAXICAB DELIVERY WAGONS
Write for Catalogue
THE AUTOCAR CO., Ardmore, Pa.

What Do You Think of
Carlson Quality Car Design?

Look at the Carlson 3-Ton Truck
Then Look at All the Others
That's the Only Argument Needed
We Have Something New—An Inside Proposition—For [a Live

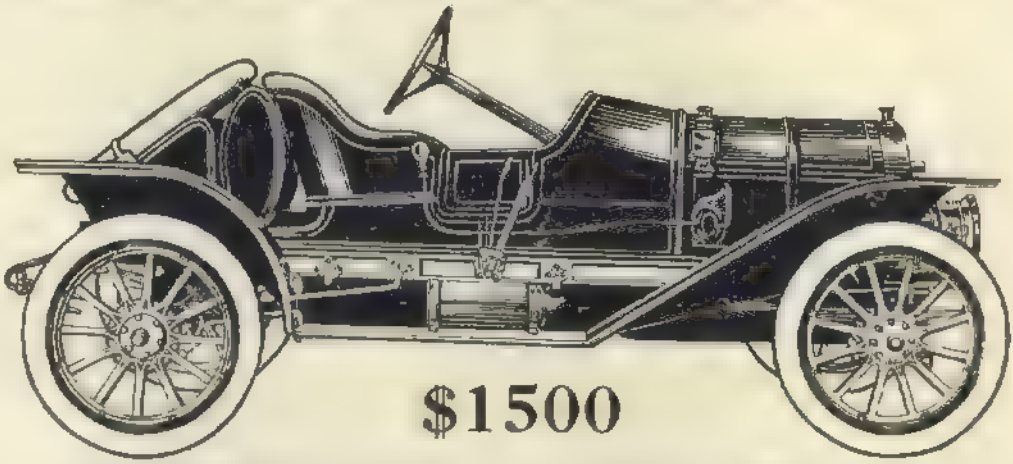
AGENT IN YOUR TERRITORY

Carlson Motor Vehicle Co., SUMMERDALE, PHILA., PA.

The COLE 30

A Car of Correct and Expensive Construction

The manufacturers of THE COLE "30" consider that they are the only builders who dare offer so good a car at so modest a price. Correct design, honesty of purpose, best of materials, all enter into this car of durability and power.



$1500

The Unit Power Plant of the COLE "30" is completely built on the block and tested until every particle of noise is eliminated and it runs as smoothly as an electric motor. Buyers of high priced automobiles who are familiar with Unit construction, know its advantages. It means perfect alignment which in turn means long life, for lack of alignment means friction, wear, noise and expense.

It has been the prediction of the trade for a year or more, that a high-class, 30 H. P. car would be built and sold for $1500. The prophecy is now realized. THE COLE "30" is that car. In order to meet the conditions for the best design material and construction at that low price, it has been necessary to reduce the margin of manufacturing profit to a minimum.

On the Indianapolis Motor Speedway, December 17th, the COLE "30" broke all records for stock cars from one to twenty miles. This is proof of our claims for speed, durability and reliability.

What interests most buyers next to quality, is **time of delivery.** All our material was purchased right. We have positive bond guaranteed contracts that have enabled us to increase our 1910 output 60% and to ship daily more than double the promised deliveries. This offers an opportunity for more live dealers.

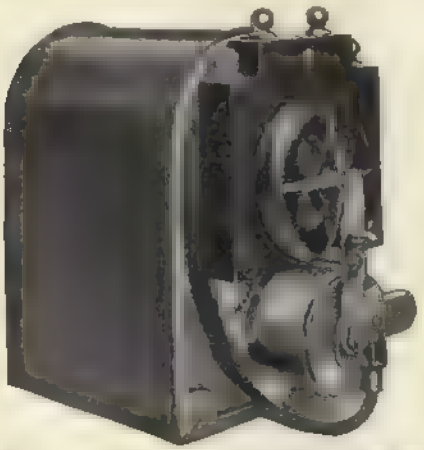
Write us to-day and state whether you are thinking of buying or selling cars. Our catalog is interesting to both the motorist and the dealer.

COLE MOTOR CAR CO., Indianapolis, Ind., U.S.A.

sures an amalgamation of the various plies and a longer life for the tire in every respect. In the case of the anti-skid tire the leather tread containing the steel studs is made a part of a rubber carcass itself and separation is claimed to be impossible. This removes what has always been the chief objection to leather tread anti-skid tires

THE CONNECTICUT MAGNETO

The Connecticut Coil Department of United Manufacturers, well-known makers of automobile coils and other electrical devices for use on automobiles, have just placed on the market and exhibited for the first time at the Madison Square Garden Show, their new Connecticut Magneto. This instrument is the result of several years' work, and the makers state that they have delayed placing same on the market until it was thoroughly tested, and in their estimation, an improvement on all existing types. Strong claims are made for its efficiency, simplicity and accessibility.



View of the new Connecticut Magneto, which has several new features, such as self-gap spacing which can be instantly changing cylinders, transformer coil in the form of a unit etc.

It is claimed that it is possible to fire the engine on as slow a speed as can be done with a coil, and that the engine can be started on a quarter turn of the crank, the same as when firing from the coils, and that spinning the engine is not necessary This means that the motor can be run at very slow speeds on the magneto, it not being necessary to shift over the batteries This magneto is very simple in form and has the advantages of the high tension, double wound armature form and also of the low tension separate transformer type The wiring is extremely simple, there being but one small wire running from the magneto to the switch, and the secondary wires being connected directly to the plugs

A feature of the construction consists in making the transformer coil a replacable unit. It is in the form of a cartridge, which protects it from dust, moisture and injury and is threaded into the magneto so that it can be instantly removed and replaced by another unit. The parts are so arranged that they can be quickly taken apart and the instrument dismantled without the use of tools. The distributor cover, for instance, is held by a small locking spring, by raising which the distributor arm can be withdrawn for examination or cleaning.

The interrupter, in the same way, is a unit, and can be readily taken out for examination or adjustment. The interrupter housing is reversible, making it possible to connect the advance and retard lever at either side of the magneto, as conditions on the car may require. By simply changing three screws the magneto can be changed from right to left running

The cams are renewable by a half turn of a screw driver and the entire instrument is practically dust and waterproof.

A feature of importance and one which will be appreciated by the average owner and operator is the arrangement on the outside of the instrument, of four safety gap windows, so that in case one of the cylinders is missing, a spark will immediately begin to jump across the safety gap, thus forming a tell-tale that even a tyro cannot mistake. This is an exclusive feature.

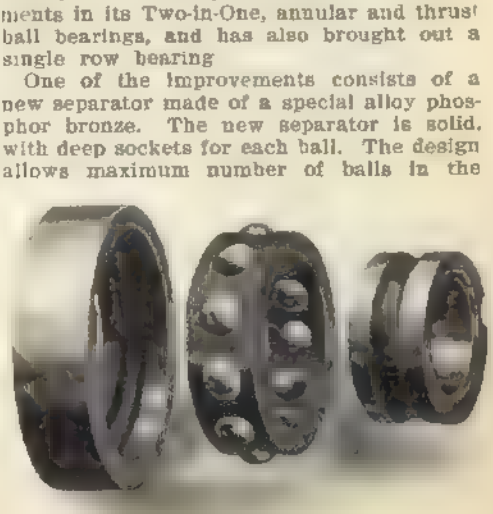
The oiling is carefully taken care of, so that it is claimed it is impossible to flood any of the parts so as to cause short circuiting. Imported ball bearings are used throughout.

The prices of the instruments are as follows: Type 4-A, 4-cylinder model, $125; Type 6-A, 6-cylinder, $135.

NEW DEPARTURE BALL BEARINGS FOR 1910

The New Departure Mfg. Co., of Bristol, Conn., has recently made some improvements in its Two-in-One, annular and thrust ball bearings, and has also brought out a single row bearing

One of the improvements consists of a new separator made of a special alloy phosphor bronze. The new separator is solid, with deep sockets for each ball. The design allows maximum number of balls in the



New Departure Single Row Annular Ball Bearing

bearing. The sockets are of slightly greater radius than that of the ball itself, which allows lubrication to be retained around the ball, with the result that the ball scarcely comes in contact with the retainer at all and is revolving in a perfectly lubricated pocket without friction

The separator is not a point contact separator, but is designed in such a way that the lubrication is retained at the diametrical center of the ball at right angles to the axis of rotation, which is the point at which

Separator used in the New Departure ball bearing

the ball can be retained at its proper position with minimum amount of pressure against the separator. The separator is also designed so that it is not possible for the ball to wedge or cramp in moving along its path of rotation. At all times it is carried forward with a perfectly free and floating motion. Another important advantage claimed for the separator is that in case of fracture of the ball, the separator retains the broken parts within its pocket preventing injury to the bearing itself or other damage commonly caused by broken parts falling from the bearing.

The single row bearing offers advantages that are important. The same type of separator is used in the single row bearing as in the double row, with the difference that it is adapted to the single row type and the two halves, rather than being back to back, face each other, and in this combination form a pocket that is more than half the size of the ball. The two sections of separator in this case are firmly riveted together by large heavy rivets so that it is almost impossible to tear them apart The new single row type is built so that there is very little opening in the exterior of the bearing through which grit can get into ball races and sockets. The remainder of the bearing is made of the same special analysis of steel that has proven so satisfactory and reliable in the New Departure double row.

THE 1910 "STAPLEY"

The new 1910 model of the Stapley tire pump manufactured by the Bridgeport Brass Company, 253 Broadway, New York City

The cylinders are rustless, seamless brass and the air intake is at the top of the pump, so that neither dirt nor dust is drawn in.

The "Stapley" Double Cylinder Automobile Tire Pump

To provide a positively non-leaking joint, the pump cylinder is fastened rigidly to the foot base. On one model there is a pressure gauge at the top of the cylinder, to show the inflation pressure in the tire and the pumps are provided with an automatic valve-opener which allows the tire valve to close without loss of air

The price of the pump without gauge is $6 and with gauge $7

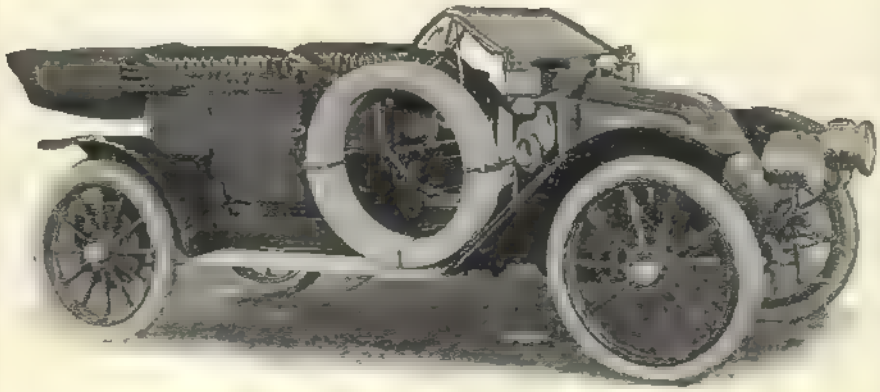
AUTOBESTINE BRAKE LINING

The Woven Steel Hose & Rubber Company, of Trenton, N. J., are making a specialty of Autobestine brake lining. This new brake shoe lining is a composition of purely mineral and fireproof substances which are claimed to be absolutely indestructible under any degree of heat

---

The Strelinger Marine Engine Co., of Detroit, Mich., recently purchased the business of the United Manufacturing Co., well-known makers of the "Little Giant" marine engines. The Strelinger Company will continue to make this motor as well as its own line.

Croxton-Keeton
French Type



Suburban, Price, $2850
Top, $100 Extra; Windshield, $50.00 Extra

Features:—

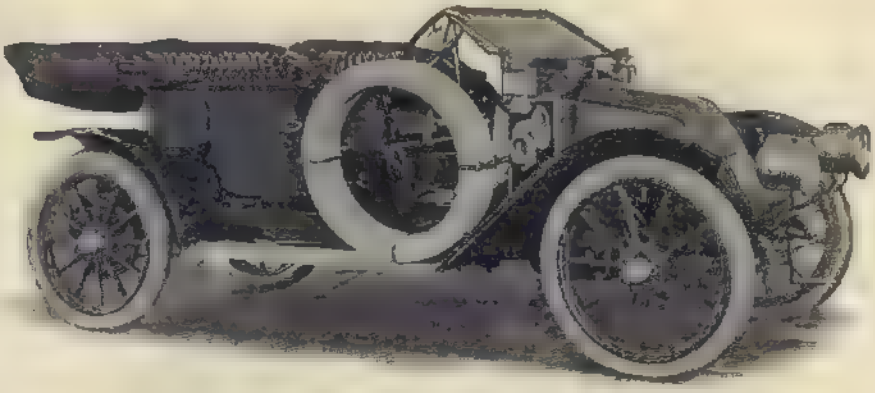
Radiator at rear of motor.
Thermo-Syphon Circulation.
Power Plant removable as a unit.
Transmission and Shifting Levers removable as a unit without disturbing body.
Low Center of Gravity.
Turns in 30 feet.
Wheel Base, 115½ inches.
Wheels, 36 inches.
Road Clearance, 10¾ inches.

Write for new catalog and agency proposition

The Croxton-Keeton Motor Co.
130 Walnut Street, MASSILLON, OHIO

NEW YORK 1662 Broadway	BOSTON 16 Columbus Ave.	PROVIDENCE Blackstone Street
PITTSBURG 5920 Baum Street	CLEVELAND, O. 2174 E. Ninth Street	CHICAGO 2800 Michigan Ave.
TOLEDO, O. 233 Ontario, Street	KANSAS CITY, MO. 425 Delaware Avenue	DENVER

Croxton-Keeton
French Type



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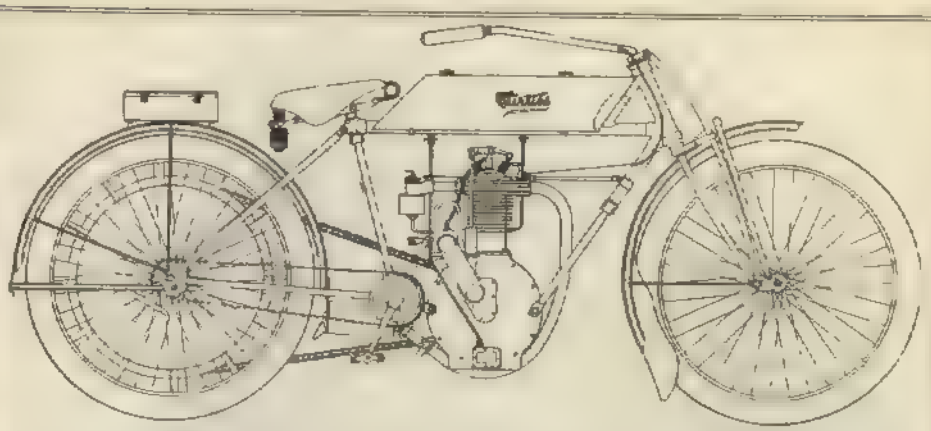


The Greatest Roadsters on Earth

1910 CURTISS—4 H. Single, 8 to 9 H. Twin

The Reasons Why: Big, powerful, smooth running engines that never falter. A frame and equipment that is unsurpassed for neatness and strength. Mechanically operated valve-in-the-head motors. Large diameter fly-wheels. Off-set cylinder. New "constant level" oiling system. 1½ inch belt. Persons tool bag.

The Herring-Curtiss Co., Hammondsport, N. Y.

Member M. M. A.

Control at Your Finger's Tip

The Eclipse Free Engine Pulley

can be attached to any belt-driven motorcycle. Saves gasoline and muscle, as the power can be shut off on the down-grade and the motorcycle can be started without working against the compression of the engine It works on the principle of an automobile clutch and for steep hill work can be readily slipped to increase climbing power.

Price, $15.00

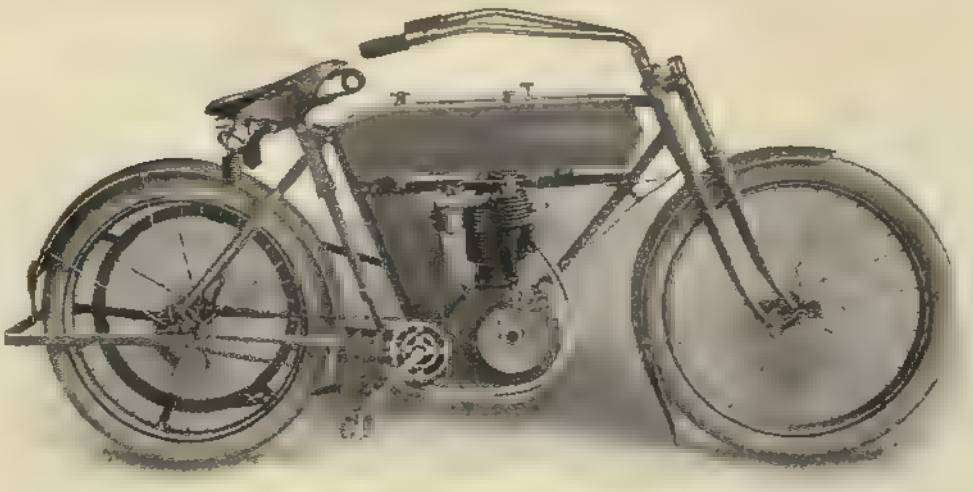
For sale nearly everywhere. If your dealer does not sell it, write to us and we will tell you where it can be purchased.

We "made good" with our **Eclipse Coaster Brake,** and we stake our reputation on the **Eclipse Free Engine Pulley.** We are also manufacturing Aeroplane hubs. If interested, write for particulars.

Eclipse Machine Company

ELMIRA :: :: N. Y.

1910 GREYHOUND



4½ H. P., large fly-wheel in oil-tight a uminum case, double grip contro., flat or V belt, combination tank for gasoline, oil, batteries and coi The Greyhound Shock Absorber and cushion front fork, the greatest of all the comfort devices. Large tool box wheels, 28 x 2½. Fine lines, best material and workmanship.

Send for full details. Proper inducements to proper agents.

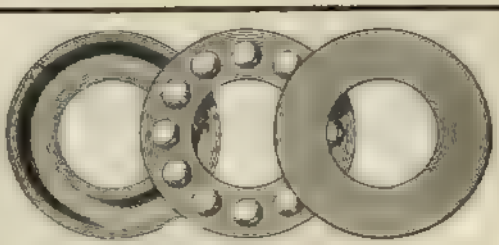
GREYHOUND MOTOR WORKS :: 1453 Niagara St. :: Buffalo, New York

Member Motorcycle Manufacturers Association

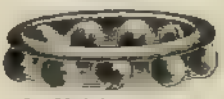
SALES AGENTS.—Metropolitan District—The Brown-Dewey Co., 1697 Broadway, New York, N. Y. Chicago District—Whipple, "The Motorcycle Man," 923 W. Jackson Blvd., Chicago, Ill.

THE STAR BALL RETAINER CO.

Lancaster, Pa., U.S.A.



Complete Thrust Bearing



Radial Retainers

Manufacturers of Radial Ball Retainers, Thrust Ball Retainers, Complete Thrust Bearings, Special Stamping, etc.

Clincher Bicycle and Motorcycle **TIRES** For Single and Double Clinch Rims

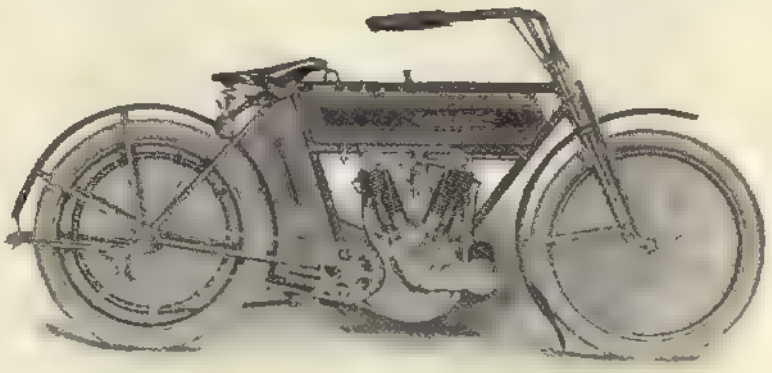
Rubber Gas Bags, Tubing, Lamp Connections, Tire Patches and Tape

INDIANA RUBBER AND INSULATED WIRE COMPANY

JONESBORO :: :: :: :: INDIANA

EXCELSIOR AUTO-CYCLE

The Twin You Have Been Waiting For



Adhering to our policy of presenting nothing till we know it is right, we have refrained from meeting the demand for a double cylinder Excelsior till we had overcome the objectionable features heretofore found in this type of motorcycle and had thoroughly tried and proved the many valuable details that make THE EXCELSIOR DOUBLE different from the common kind.

It has every good feature of the regular Excelsior Auto-Cycle, such as low saddle position, free motor, automatic force feed oiler, silent, vibrationless motor, independent chain adjustment, quick acting stand, etc., combined with power and speed to meet any demand.

Its range of speed, ease of control and instant response to throttle and spark mark the greatest advance in motorcycle construction

Equipped with the Bosch high tension magneto driven by enclosed gears running in oil-tight case.

Our new catalog C10 gives full description of both single and double cylinder models.

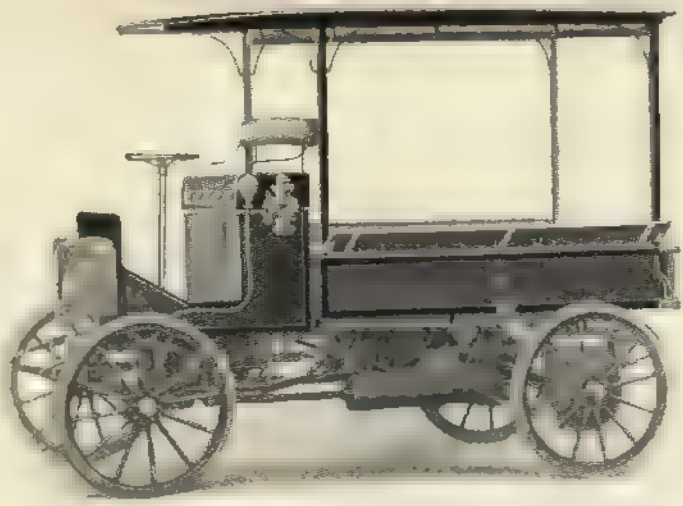
WRITE FOR IT

Excelsior Supply Company

ESTABLISHED 1876

233-237 Randolph St., :: :: :: Chicago, Ill.

Eastern Representative: STANLEY T. KELLOGG, 2312 Broadway, New York



THE
ACORN
Commercial Car

"BUILT IN THE HILLS"

Every car is tested with an overload over Cincinnati hills before shipment.

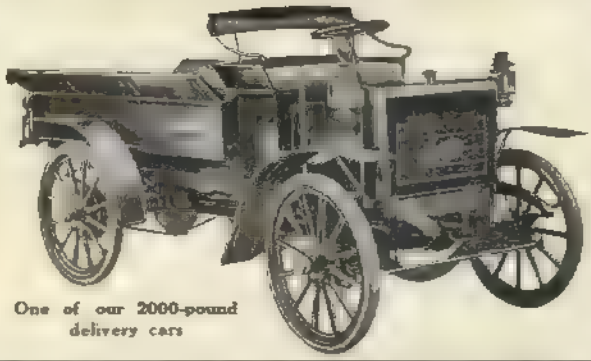
This means that it will give satisfaction anywhere.

It has the power, it is built to wear and it will wear

ANY STYLE BODY BUILT TO ORDER

The dealer who secures the agency for a good, light delivery car has made his fortune. Write for full information.

THE ACORN MOTOR CAR CO.
FIFTH, EGGLESTON AVENUE AND LOCK STREET
CINCINNATI, OHIO



One of our 2000-pound delivery cars

CARS THAT "RUN, STAND UP, AND MAKE GOOD"

1910 "Monitor" Commercial Cars

Designed Right! Built Right! Prices Right!

One of these cars will do the work of Three Horse-Drawn Vehicles, and at one half the cost. Write us what you need, and let us prove this to you.

Agents wanted in unassigned territory.

MONITOR AUTOMOBILE WORKS
Chicago, U. S. A.

NEW YORK DISTRIBUTOR
Chas. R. McClellan 1777 Broadway

The Autocar

1910 TOURING-CAR, $1750 COMMERCIAL
LIMOUSINE TAXICAB DELIVERY WAGONS

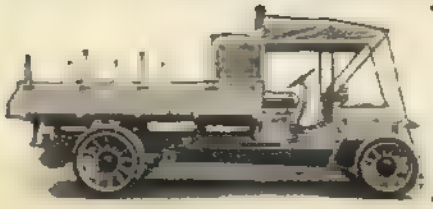
Write for Catalogue

THE AUTOCAR CO., Ardmore, Pa.

THE STERLING TRUCK
One Ton—30 H. P.

A big value for a small price

Sterling Vehicle Co., Harvey, Ill.



GASOLENE OR ELECTRIC
Motor Trucks, Delivery Wagons and Passenger Vehicles of all sizes

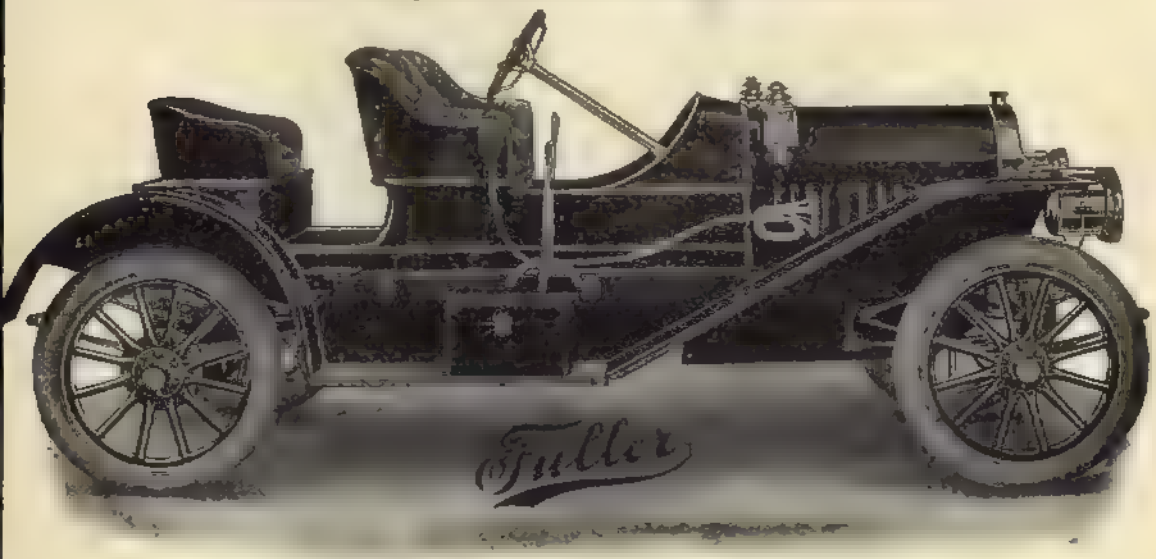
Imported and American built

The Commercial Motorcar Company, Times Building, New York, N. Y.

THE FULLER

A Representative Type of America's Best Production

Pneumatic and solid tire cars at prices ranging from $775.00 to $1165.00.
Two and four-cylinder cars, both pleasure and commercial.



Model "30" Roadster

Body—Roadster design, with single rumble seat.
Motor—Four cylinder, vertical, cast en bloc, 3¾-inch bore, 4½ inch stroke, 25-30 horsepower. Cylinders, piston, piston rings, piston pins, crank shaft, cam shaft and valve stems are ground. The motor is water cooled, circulation by the thermo-syphon system. Lubrication by circulating oil system, operated by plunger pump driven by cam. Crank case is divided so as to maintain the same level of oil for each cylinder.
Transmission—Silent planetary type, two speeds forward and reverse, multiple disc clutch.
Motor Control—Spark and throttle levers on steering wheel.
Drive—Shaft drive with bevel gear.
Ignition—Jump spark, dry cells.
Carburetor—Float feed type.
Brakes—External hub brakes on rear wheels operated by foot pedal. Expanding internal hub brakes operated by hand lever.
Weight—1800 lbs.
Wheel Base—100 inches.
Tread—56 inches.
Frame—Pressed steel.
Front Axle—"I" beam.
Springs—Full elliptic front and rear.
Gasoline Capacity—Twelve gallons.
Tires—30x3½ inches.
Equipment—Side oil lamps, tail lamp, horn, jack, tools, tire repair kit, pump and top irons.

Price, $1065.00. With Touring Body, $1165.00

Style, simplicity, efficiency, reliability and quietness are the conspicuous features. If you are in search of these qualities, any comparison you may make MUST confirm the fact that the "Fuller" is the greatest value the automobile world affords.

Investigate—find out for yourself. Send for catalog.

FULLER BUGGY COMPANY, (Dept. A) **Jackson, Mich.**

Licensed under Selden Patent

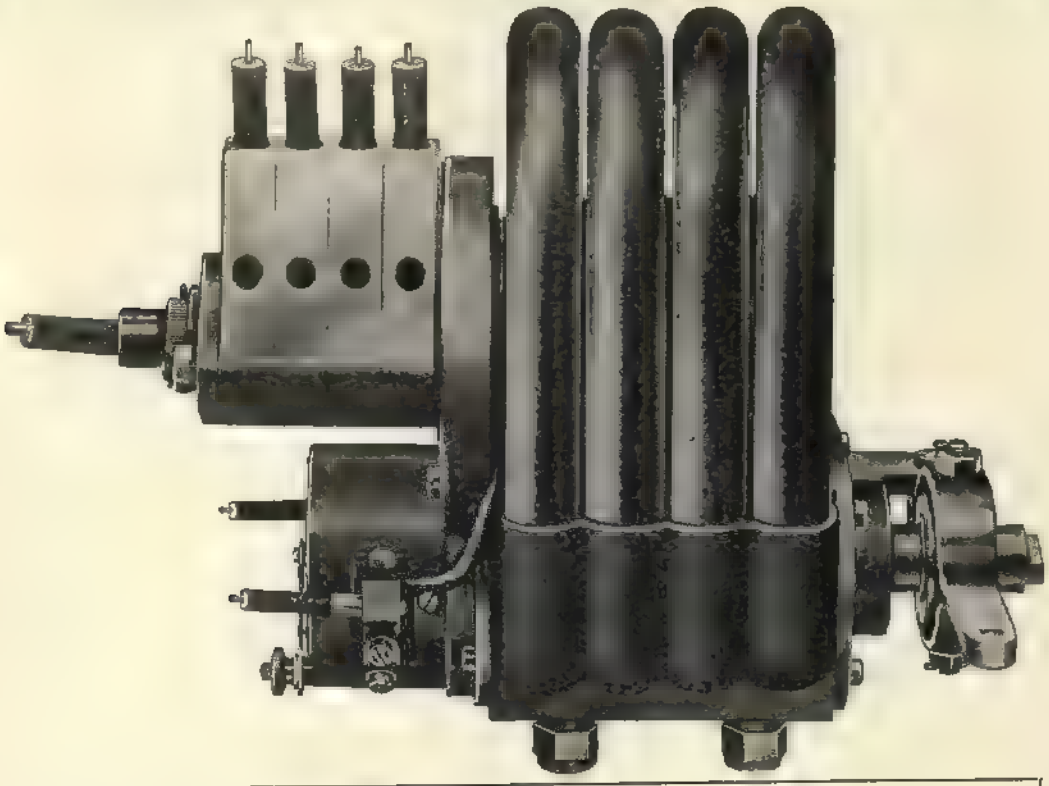
HAVOLINE OIL

¶ The extended process of filtration to which Havoline Oil is subjected makes it a better lubricant than other oils and also makes it VERY MUCH freer from Carbon.

¶ *That* is why so many Automobile Manufacturers use and recommend it.

AT ALL DEALERS
OR
Havoline Oil Co., 75 Broad Street, New York City

Heinze Magneto



UNPARALLELED!!

A rather sweeping assertion,—but we'll stand back of it.
Read the following reasons for the recognized superiority of our magneto:

We get over 100% more electricity per pound of magnet steel than is possible in any other magneto.

We use the highest grade annular ball bearings which are self-lubricating, requiring no attention. They are superior to the separable or common bearings.

The common bearings are continually getting out of alignment, run dry; thereby causing excessive friction, wear off and in a short time the armature will run against the pole pieces of the field and your magneto is ruined.

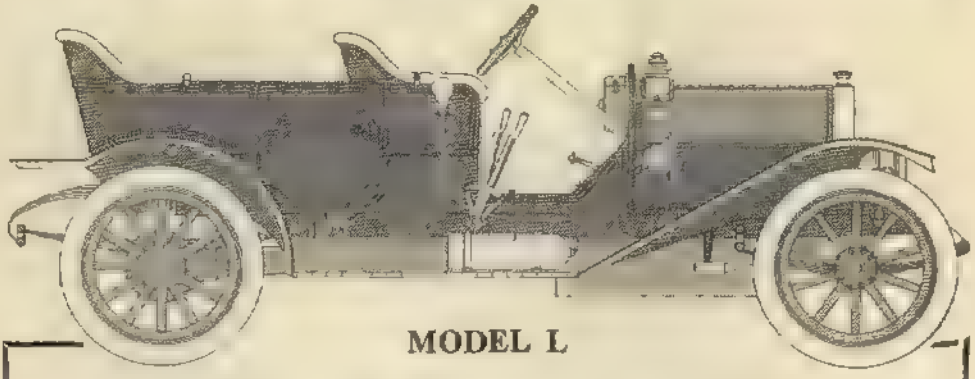
Insist on the H-E-I-N-Z-E MAGNETO, and obtain higher efficiency, greater durability and greater reliability. We furnish a positive guarantee that it will live up to every claim we make for it, or we will refund the purchase price.

Write for Catalog Five.

HEINZE ELECTRIC CO. :: :: :: Lowell, Mass.

Mr. Dealer=

Here Is a Car Made for You



MODEL L

The "Henry 35"

Built to Sell *On Its Merits* at $1750

The automobile dealer has had many peculiar contrivances offered to him with the "automobile" label attached. But the dealers know that, with the growth of the industry, it is becoming more and more difficult to dispose of "near" cars. The tendency toward cars of **real merit** at a reasonable price is getting stronger every day. There are two reasons for it:

First, the generous distribution of automobile literature has educated the public to **judge** values.

Second, the buyers of one-year cars buy into a **better class** on second purchase.

The Henry 35 was made to give the dealer a car to sell to this class of **informed** buyers. It is built to sell **on its merits** at a popular price.

We want you to see the specifications of this car before you make other arrangements for this season. We know you will recognize it as a remarkable accomplishment when price is considered. The illustration above shows plainly that the demand for style has not been overlooked.

The Henry 35 has a large motor, a long wheel base, a roomy tonneau, double drop frame, and extra long, resilient rear springs (49 inches), for easy riding.

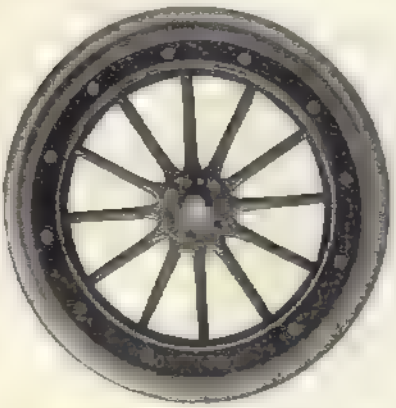
ABOUT 30 DEALERS WANTED

Henry Motor Car Company

STATION C. Muskegon, Mich.

FIRESTONE TRUCK TIRE DEMOUNTABLE RIM

A device that has proved its efficiency after many months of actual road service on motor-driven vehicles of all kinds is the Firestone truck tire demountable rim illustrated herewith and manufactured by the Firestone Tire and Rubber Co., Akron, Ohio



The "Firestone" Truck Tire Demountable Rim

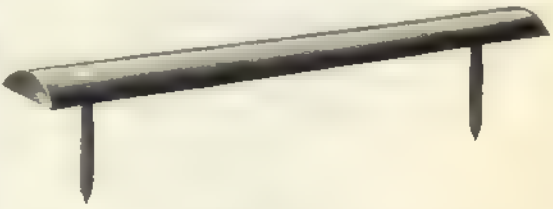
This device simplifies the process of removing and replacing tires to such an extent that these changes can now be made by the driver right on the spot with only a few minutes delay. As will be seen from the accompanying illustration, the tire is secured in the channel by the standard side-wire fastening, as in regular equipments. To the inner circumference of this rim is riveted a beveled band. This band has a

Parts of the "Firestone" Truck Tire Demountable Rim

section cut out to allow it to fit over the plate on the rim of the wheel, thus preventing creeping. A single-flanged rim is shrunk on the felloe of the wheel and the demountable rim is held in place by this flange on the inner side of the wheel and on the outer edge by two rings, the outer ring being held in place by the twelve bolts and nuts, the bolts passing clear through the felloe. As it is the work of only a few minutes to remove the damaged tire and rim and replace with a new one, this rim promises to become very popular.

"CLINCHED" MOULDING

The Novelty Mfg. Co., of Waterbury, Conn., have bought out a new style of moulding for use on bodies and tops. It is lead

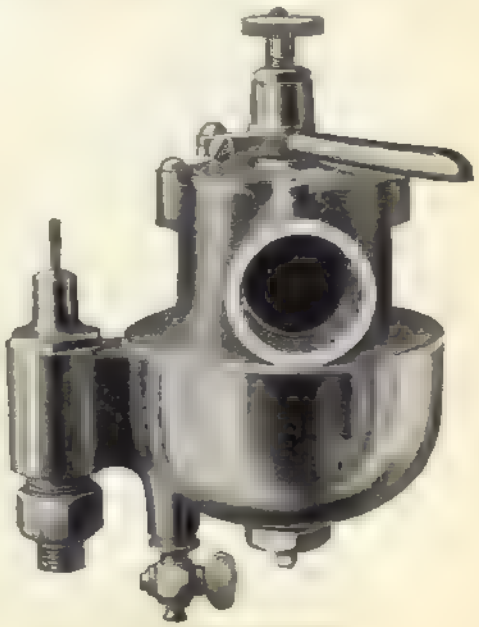


"Clinched" Moulding

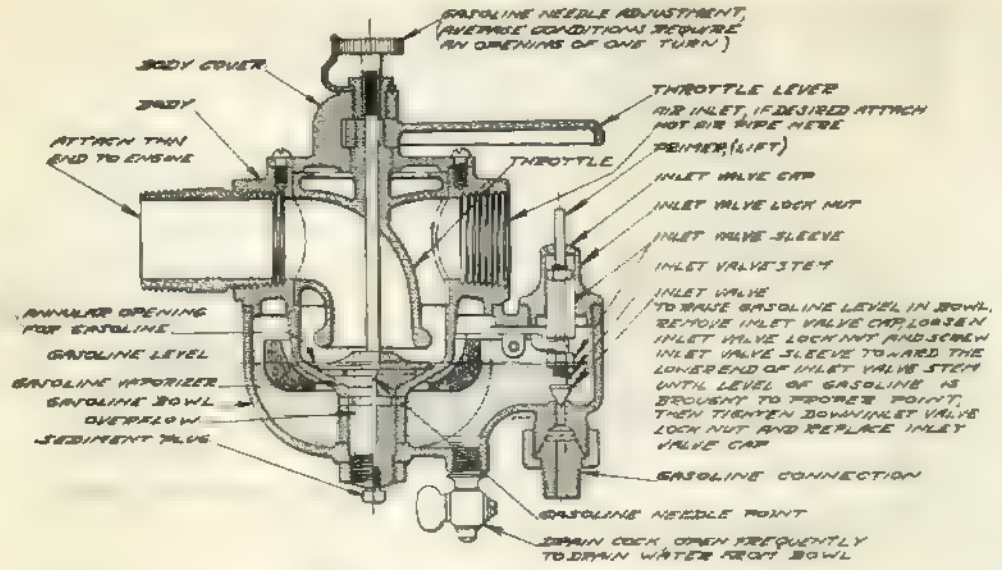
filled and the back edge is turned over, thereby avoiding the sharp edge, which usually cuts into the leather or wood, and after a short time shows a crack or opening. It is made in standard widths

THE "KRICE" CARBURETOR

A carburetor that has shown marked improvements in the way of efficiency and low fuel consumption and which has attracted no little attention among marine engine builders and automobile manufacturers, is being put out by the Krice Carburetor Company of Detroit.



The "Krice" Carburetor


GASOLINE NEEDLE ADJUSTMENT, (AVERAGE CONDITIONS REQUIRE AN OPENING OF ONE TURN)
BODY COVER
BODY
ATTACH THIN END TO ENGINE
THROTTLE LEVER
AIR INLET, IF DESIRED ATTACH HOT AIR PIPE HERE
PRIMER (LIFT)
THROTTLE
INLET VALVE CAP
INLET VALVE LOCK NUT
INLET VALVE SLEEVE
INLET VALVE STEM
INLET VALVE
TO RAISE GASOLINE LEVEL IN BOWL, REMOVE INLET VALVE CAP, LOOSEN INLET VALVE LOCK NUT AND SCREW INLET VALVE SLEEVE TOWARD THE LOWER END OF INLET VALVE STEM UNTIL LEVEL OF GASOLINE IS BROUGHT TO PROPER POINT, THEN TIGHTEN DOWN INLET VALVE LOCK NUT AND REPLACE INLET VALVE CAP
ANNULAR OPENING FOR GASOLINE
GASOLINE LEVEL
GASOLINE VAPORIZER
GASOLINE BOWL
OVERFLOW
SEDIMENT PLUG
GASOLINE CONNECTION
GASOLINE NEEDLE POINT
DRAIN COCK, OPEN FREQUENTLY TO DRAIN WATER FROM BOWL

Sectional View of the "Krice" Carburetor

During the entire season of 1909 the Krice Carburetor Company have made the most exhaustive and rigorous tests of their carburetor under all conditions and upon all kinds of gasoline motors. Several thousand carburetors have been put out in this way and used upon marine, automobile and stationary motors. Their experience has proved without a doubt that the Krice carburetor is one of extraordinary merit and value

The distinguishing feature of the Krice carburetor is the method of spraying gasoline into the mixing chamber by means of a long, thin, circular opening (known as an annular opening) measuring about three inches in circumference and about eight thousandths of an inch in width. Its position is directly under the air suction tube where the maximum surfaces of air and gasoline are exposed to each other. Through this annular opening gasoline is sprayed into the mixing chamber in a very thin sheet, which permits of immediate surface vaporization, followed by quick transformation into a dry and highly explosive gas.

The proper proportion of air for both high and low speed is entirely taken care of by a special construction of the throttle valve which is provided with air passage that is increased or decreased according to the position of the throttle. Other than the throttle there are no restricted air passages in the Krice carburetor.

The Krice carburetor is a very convenient one to install. The throttle valve and lever can be placed in any one of four right angles. The gasoline bowl with its gasoline intake connection can also be placed in any degree of the circle most handy for installation. Where two or more Krice carburetors are used on one engine, in multiple, the Krice Carburetor Company provide a special throttle lever so that the uniform control can be obtained.

"KLIP" PORTABLE AUTO LIGHT

The "Klip" portable auto light illustrated herewith, manufactured by the Rollman Mfg Co., of Mount Joy, Pa., is designed to aid the motorist in making roadway repairs at night, and consists of a gas hose and a small gas burner connected to a spring clip. The hose is connected to the gas tank and the burner lighted when owing to the length of the flexible tubing it may be carried around

Klip" portable auto light, clipped on the visor of a cap.

Here It Is

An Automobile Within the Reach of all—$600

The car for which the World has waited. A high-grade, reliable business runabout. Costs less to keep than a horse and buggy—does the work of three.

When not in use expenses stop. A horse eats all the time—this MAXWELL is vastly more economical.

SALE OF MAXWELL CARS TO DATE

Sold to October 1, '99, 19,791
Sold during November '99, 526
Maxwells in use to-day 19,917
WATCH THE FIGURES GROW

Maxwell-Briscoe Motor Co.

Main Office and Factory
DALE STREET, TARRYTOWN, N. Y.
Licensed Under Selden Patent

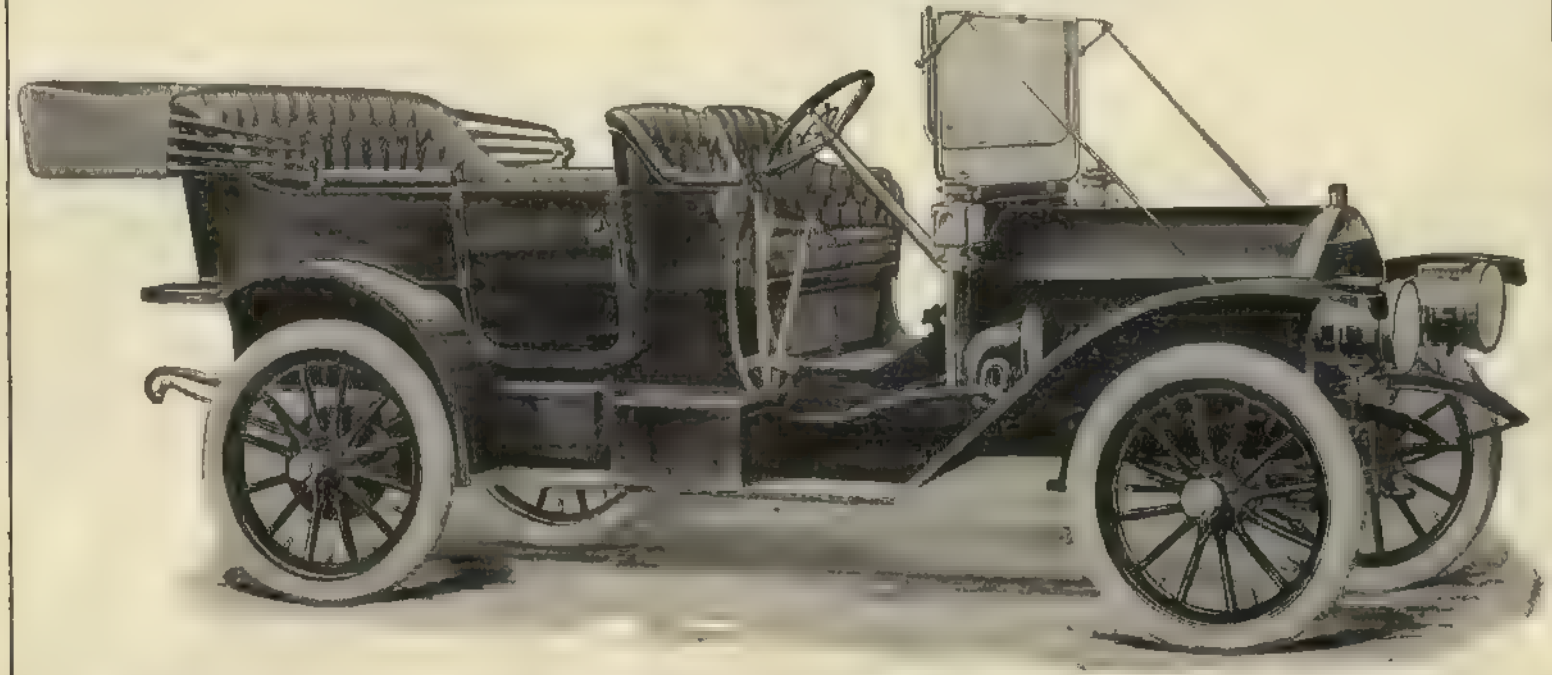
OTHER MAXWELL FACTORIES

New Castle, Ind.
Pawtucket, R. I.
Providence, R. I.
Kingsland Point, N. Y.

This announcement is of special importance to DEALERS!

There is a Steadily Increasing Demand for a Car Like This

"ENGER 40" at $2000



The BIG SALE in automobiles is admittedly in CHEAP cars, but the BIG VALUE will always be found in the car that costs enough to build it RIGHT.

Equip Your Car with Electric Lamps

For safety and convenience G. E. MAZDA Automobile Lamps are unsurpassed.

You can control head, side and tail lights by switches within easy reach of the driving seat. Electric lamps cannot blow out—fifty miles or fifteen miles an hour with the same uniform, dependable lighting.

G. E. Mazda Automobile Lamps

are made with extra tough metal filaments that resist all vibration incident to this service.

The G. E. MAZDA Headlights fully equal in brilliancy the best of acetylene lamps.

The small G. E. MAZDA side and tail lamps give a brilliant light never seen in kerosene lamps, even when new. Since there is neither soot nor heat to damage the glass or reflecting surface, and no deterioration, the brilliancy is permanent.

Book No. 3874 gives full information on the cost, wiring, battery and lamps necessary, and explains the easy method by which lamps, originally designed for acetylene or oil, can be modified for electricity. Write for it.

2437

GENERAL ELECTRIC COMPANY

PRINCIPAL OFFICE:

Schenectady, N. Y.

Department 100

Sales Offices in All Principal Cities.

Now Is the Time

EQUIPMENT

To bring your car up to its maximum efficiency use these products.

UNITED STANDARD EQUIPMENT MANUFACTURERS

MoToRoL

MoToRoL for cylinder lubrication had to be a better lubricant than any other oil to satisfy motorists who demand the Non-Fluid Oil Standard of Economy and Efficiency. We examined other oils and only produced MoToRoL after we had discovered a means of making a better oil by eliminating carbon without excess filtration; by securing proper balance between flash point, cold test and viscosity; by eliminating all acid ordinarily present in oils; and by testing our product in actual service. If you use MoToRoL you get more power, more speed, and more miles from a given quantity of gasoline and more miles from every gallon of oil.

NON-FLUID OILS

are best for your car because they keep it at its best longest, at the least cost. The manufacturers of the Sharp-Arrow ran a demonstrating car 20,000 miles and, (they said) "Without showing any wear in those parts where Non-Fluid Oil was used." Which adds one more car manufacturer to a list of over sixty who use Non-Fluid Oil and recommend it to their customers because it lubricates most at least cost. Every dollar spent for Non-Fluid Oil saves five for repairs. When you ask for it, stick to your request. Packed in orange-colored cans bearing this trade mark NON-FLUID OILS

MEZGER AUTOMATIC WINDSHIELD

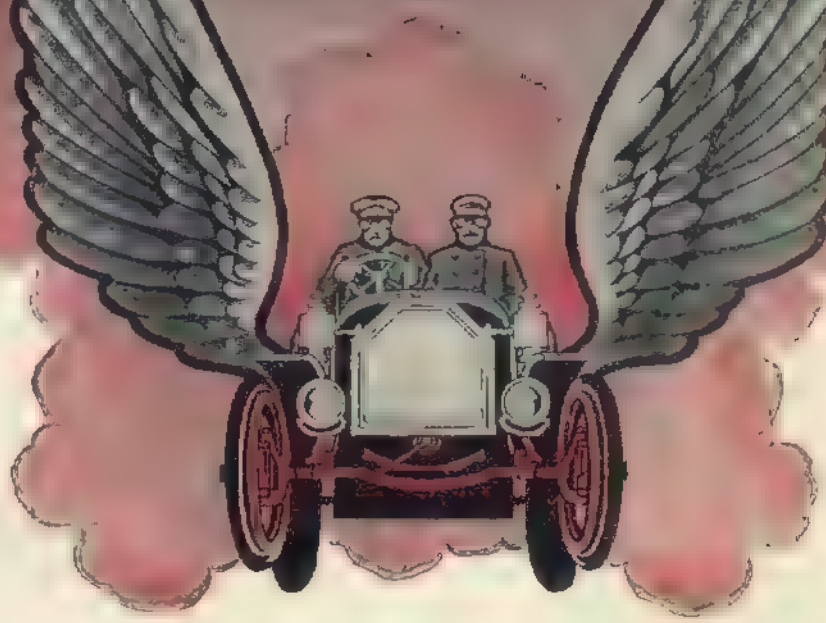
Up or down in a jiffy. Don't stop your car. No set-screws to tinker with. You simply lift it up and it locks itself upright. A slight pull with one hand puts it down against the rubber bumpers where it rests—firm, noiseless. It is always ready and always works. The Mezger Automatic is made of finest polished French plate glass and brass tubing. The glass rests against heavy piano felt inside a bronze channel—free from the vibrating and jolting of the car.

Soot-Proof Spark Plug. You can't short-circuit a Soot-Proof.

UNITED MANUFACTURERS, 76th St. and Broadway, New York

Mobiloil

Makes Your Car Fairly Fly



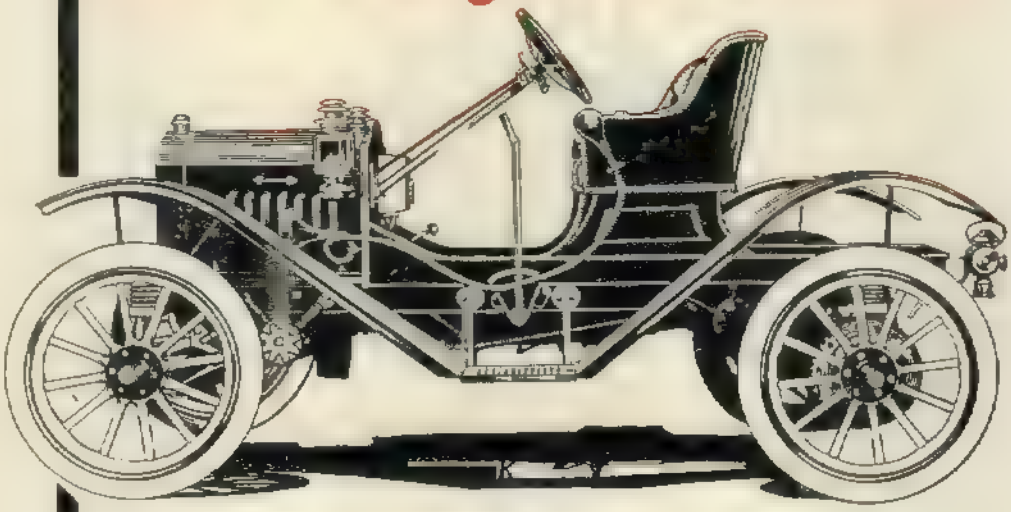
•the oil that lubricates most•

SOLD EVERYWHERE

Vacuum Oil Company

New York, U.S.A.

Everyman's



Think of it---$485 for the best-built, most thoroughly proven, easiest riding, most economical, handiest small automobile in the world!

The New Brush Runabout not only surpasses all small cars, but is far ahead of cars of many times its high standard.

Even though we have learned the lessons all manufacturers have to learn by experience, even though we have manufacturing facilities as nearly perfect as money and genius can make them—still we could not build a car of the quality of the 1910 Brush if we were limited to the big cars with all their complicated parts and all parts necessarily smaller and weaker.

Here's where the genius of the designer counts. The Brush has always been and still is the most refined Runabout built in America.

The new 1910 Brush is not a designer's dream but the result of years of experience and knowledge acquired by manufacturing 1909 Brushes that are in daily use. It is a car which with one chassis adapts itself perfectly by change of bodies to a number of different uses.

It is a car new in power, smoothness, speed, and looks, but built on proven principles by an organization ready to serve.

The Brush has the fewest possible parts but they are of sufficient size and strength to stand the hardest knocks.

Simplicity makes it possible to build the car right and still sell it at this wonderful price.

As for reliability, there is no comparison between the Brush and any of the complications of larger multi-cylinder motors.

With the new Brush you get speed, endurance, capacity, reliability, light weight, low gasoline and oil consumption, low tire expense with four-cylinder power and smoothness.

Its new balanced motor runs as quietly as a four-cylinder and is as flexible. Its speed is astonishing.

The most wonderful improvement in Motor Car Construction in years.

While the balanced motor is the most remarkable feature of the 1910 Brush, we have many other improvements and refinements.

Here are some of them: wheel base lengthened 6 inches, more graceful and aristocratic lines, Mercedes type radiator, new selective control, universal coupling-shaft improved, fine proof commutator, multiple disc clutch, cushioned pressure on control levers entirely hidden, and a light, more quiet muffler.

In our magnificent new plant we make every part of the Brush except the wheels, tires and electric equipment. The Brush buyer gets the car maker's and parts-maker's profit.

Mobiloil

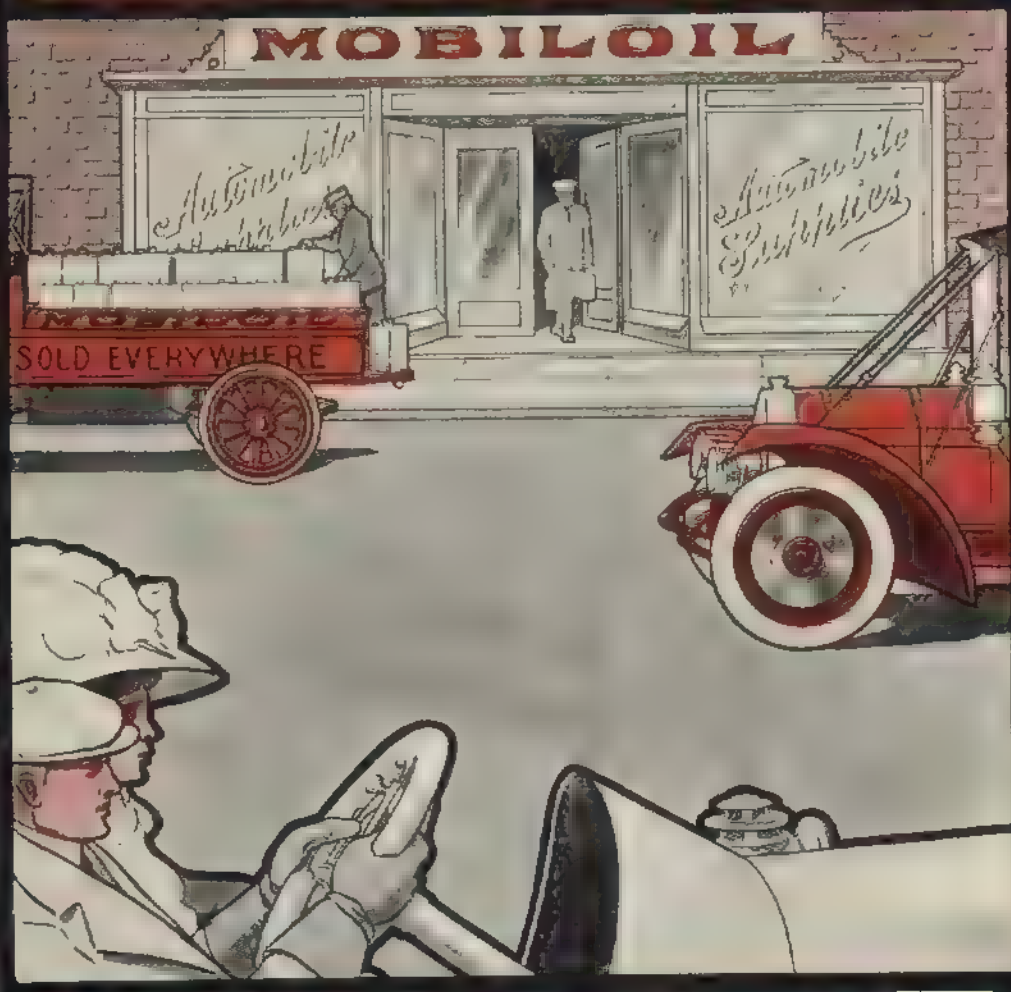
·the oil that lubricates most·

MADE TO STAND THE TEST OF TIME

VACUUM OIL COMPANY
ROCHESTER, U.S.A.

Mobiloil

✦ the oil that lubricates most ✦



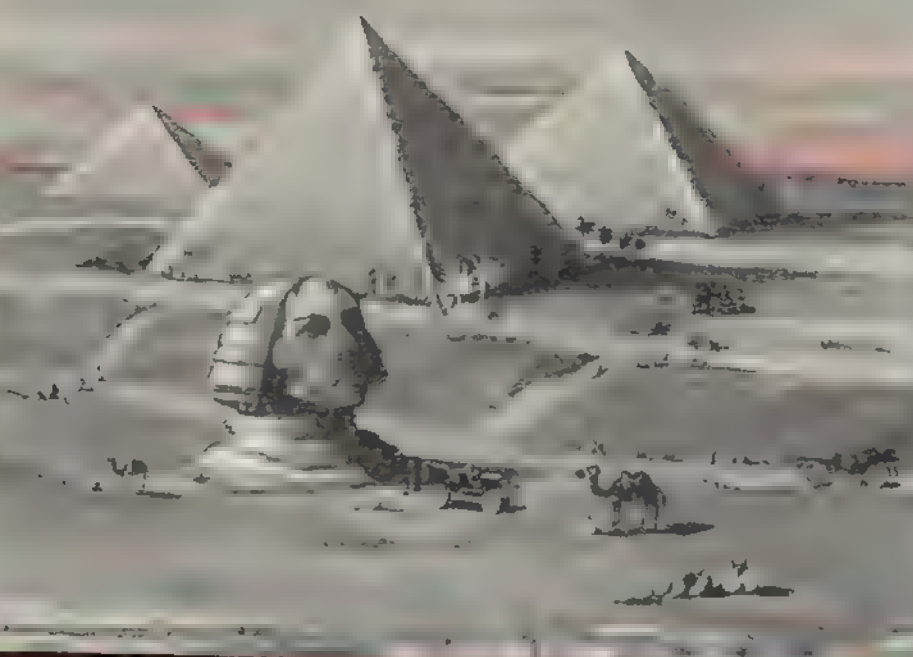
MOBILOILS - FOR EVERY TYPE OF MOTOR

VACUUM OIL COMPANY, NEW YORK

Mobiloil

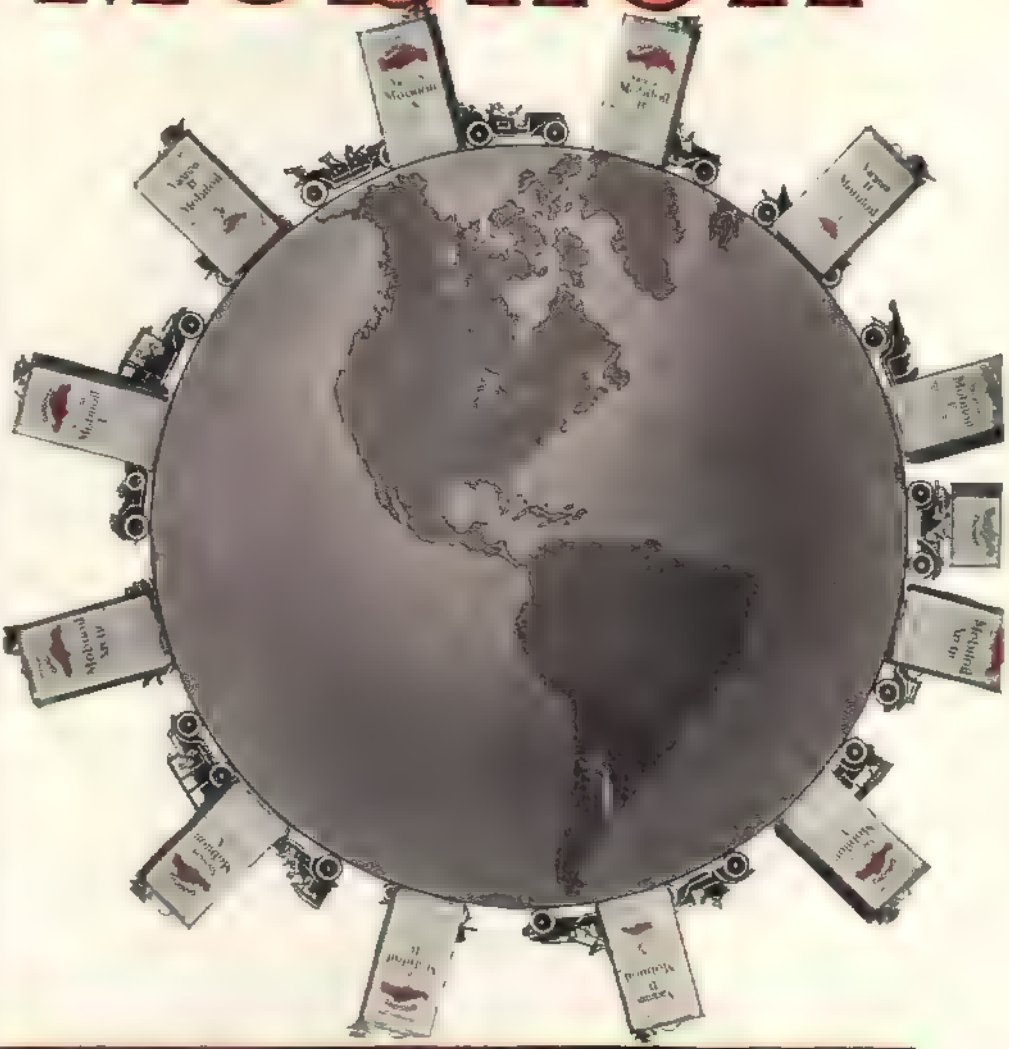
•the oil that lubricates most•

MADE TO STAND
THE TEST OF TIME



VACUUM OIL COMPANY
ROCHESTER, U.S.A.

Mobiloil



FOR EVERY TYPE OF MOTOR

✦ the oil that lubricates most ✦

FOR SALE EVERYWHERE YOU GO

VACUUM OIL COMPANY, Rochester, U.S.A.

Send for Our
1910
Catalogue

Long Distance Automobile Horns

OUR **exclusive styles, finish,** and **quality** are worthy of the **name** we bear, and can only be obtained by our **up-to-date** system of manufacturing, superintended by **master mechanics.** We also can supply you with heavy pliable **bulbs, reeds non-corrosive, flexible tubing asbestos-lined.**

Nonpareil Horn Manufacturing Co.

139-147 Emerson Place, Brooklyn, N. Y.

GET RIGHT ON YOUR IGNITION

Specify the B. & S. Igniter on your new car, or to replace the out-of-date system on your old car when it is overhauled.

So simple and compact that it can be attached to any motor with trifling expense.

Always operates at **maximum** efficiency regardless of motor speed.

Will give better results than **any** magneto at one third the cost.

It's worth investigating.

BRIGGS & STRATTON CO.

MILWAUKEE :: :: WISCONSIN

Vanderbilt Cup Race, Oct. 30th

WINS!

MASSAPEQUA SWEEPSTAKES

UNDER THE DIRECTION OF

MR. JOE MATSON

DRIVING

CHALMERS-DETROIT THIRTY, No. 43

Oil that will stand up and lubricate under the high-speed and severe conditions of racing

MUST BE BEST FOR YOUR MOTOR

Say what make of Car you have, state you "saw it in Cycle & Automobile Trade Journal" and we'll mail you sample of the grade of OILZUM you should use and our Booklet, "The Oil of Quality," FREE.

OILZUM IS SOLD

In NEW YORK by THE AUTO SUPPLY CO., Broadway and 59th St.
In NEWPORT by B. MORGAN GARAGE & SUPPLY STORE.
In BOSTON by THE WHITE COMPANY, 541 Newbury St.
In PROVIDENCE by J. C. BROWN, 64 Washington St.
In KANSAS CITY by KANSAS CITY AUTOMOBILE SUPPLY CO.
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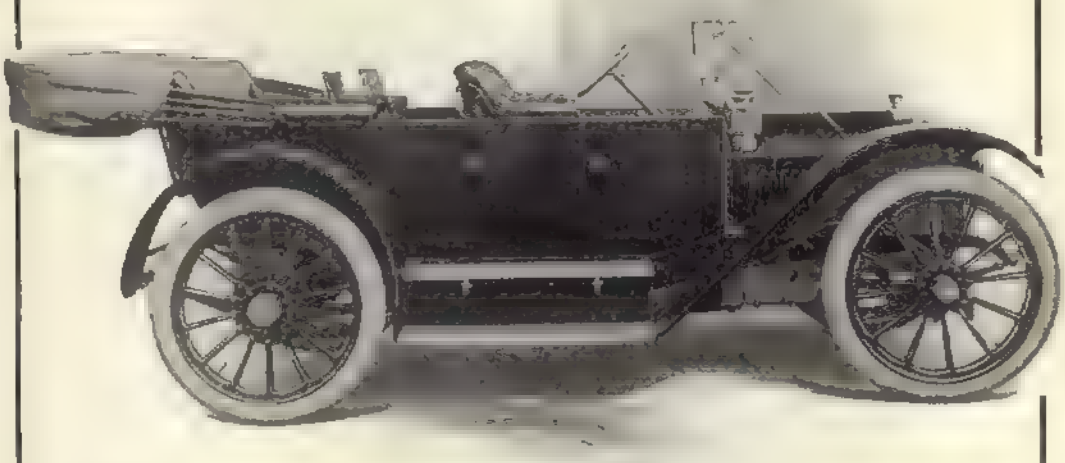
EVERYWHERE by Dealers who CARE for OIL that SATISFIES.

MANUFACTURED BY
THE WHITE & BAGLEY COMPANY
WORCESTER, MASS.
U.S.A.



THE OWEN *Designed for Touring Comfort*

A 1911 MODEL

Bristling with features that will be in vogue in 1911 and 1912. For example:

LEFT SIDE DRIVE

Some cars will have the steering gear on the left side in 1911, many more will have it in 1912, because it's the logical place for it. The operator can better gauge the road in passing other vehicles and in driving up to the curb on the right side, as usually required by law. The front seat passenger alights on the walk instead of in the mud, as is necessary with right-side-driven cars.

On the 1911 **OWEN** the gear shifting lever is in the center of the foot boards at the driver's right, giving **left side drive** with **right hand control** and allowing entrance from either side of the car. No levers on the outside of the body.

LARGE WHEELS—42 Inch

The history of the Automobile industry shows a constant increase in the size of wheels. And why not? They ride easier, increase tire mileage, reduce road shocks and prolong the life of the whole automobile.

HIGH FRONT DOOR BODY

Not a freakish torpedo, but a classy, roomy, luxurious, touring body.

LONG STROKE MOTOR—4 cyl., 4¾" x 6"

This means quietness, long life, lack of vibration, great power at slow speed, hill climbing ability.

FULL TOURING EQUIPMENT

Why should the purchaser get only part of an automobile when he buys a car? That's what it amounts to when he buys a stripped car, as is now customary.

The 1911 **OWEN** is not only "designed for touring comfort," but is **equipped** for it in the most liberal way.

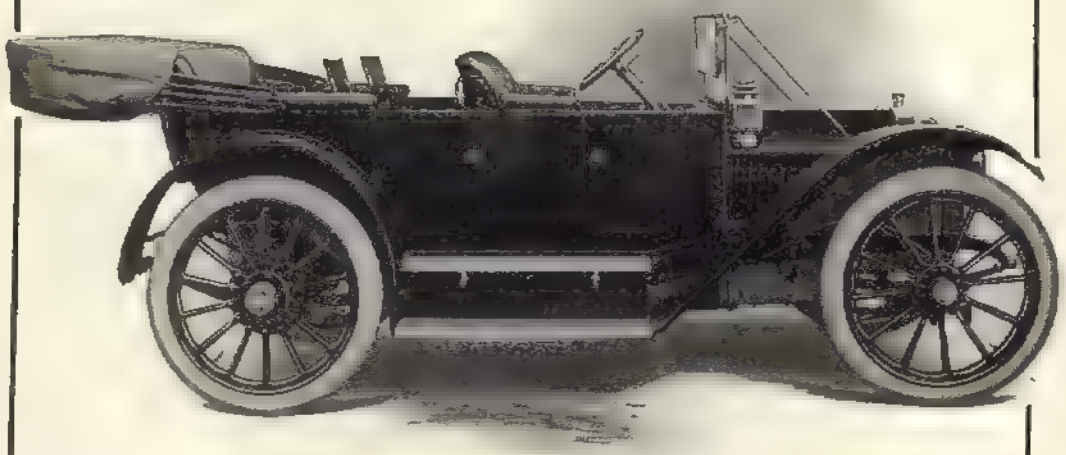
The purchaser has nothing extra to buy but the fuel.

Regular equipment includes—finest quality of mohair top with side curtains and top slip cover, folding wind shield, speedometer, clock, electric horn, combination electric and gas headlights, combination electric and oil side and tail lamps, Prest-O-Lite tank, muffler cut-out; foot accelerator, gasoline and oil gauge, robe rail, foot rest, trunk rack, tire carrier irons, tire chains, full set of tools and one extra inner tube.

PRICE, $4000, F. O. B. DETROIT

High-grade dealers interested in the 1911 **OWEN** should write us at once.

Owen Motor Car Company, Detroit, Michigan



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PRICE, $4000, F. O. B. DETROIT

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Owen Motor Car Company, Detroit, Michigan

PANHARD OIL

An oil filtered to excess will prove an expensive lubricant. Absence of carbonization is poor economy if cylinders are being scored and cut because of insufficient lubrication.

The word "light" as applied to cylinder oils should refer only to body—not to color. Lightness of color **MAY** mean freedom from carbon, and it may **NOT.**

PANHARD OIL is manufactured from the best Pennsylvania crude stock. It is of heavier lubricating body than any other brand, of equally light color, on the market today, and will not carbonize if properly used.

Its systematic use will increase the power and lengthen the life of your engine—a fair trial is the best proof. It is made by a firm which has supplied high-grade lubricants to the general manufacturing industry for over thirty-five years.

PANHARD GREASES are as good as PANHARD OIL. We supply an oil or a grease suited to every moving part of any gasoline engine.

Every automobile owner should have a copy of our new booklet, "Hints on Lubrication." Your name and address on a postal will bring a copy by return mail.

Address All Inquiries to **GEORGE A. HAWS,** 72 Pine Street New York

PANHARD OIL

This oil is manufactured from the best Pennsylvania crude stock—it has sufficient body to lubricate perfectly and will not carbonize—if used properly.

PANHARD OIL is made in one quality only—the best. But in four consistencies: Light, medium, heavy and extra heavy. It is important to use the right grade.

We sell PANHARD OIL at one price—because we make one quality.

There are concerns that sell 20-cent oil and 40-cent oil under the same name and brand the quality varies as much as the price it must. We believe this method is misleading—at any rate we do not do it.

If you want a cheaper oil we can supply it—but it is not PANHARD and does not go out under that name. It is a good oil—best, we believe, for the price.

You can save money, provided you have your own garage, by ordering by the barrel (containing 50 to 53 gallons) or half barrel (containing 30 gallons). We ask you to order through your dealer. Should you experience difficulty in getting the genuine PANHARD please advise us.

The systematic use of this oil will increase the speed and power of your car; a fair trial is the best proof.

PANHARD GREASES are as good as PANHARD OIL. We supply cup, transmission and graphite greases. Also heavy gear oil, etc.

Our booklet, "LUBRICATION," tells the whole story. It gives a lot of hints on oiling, besides many practical suggestions. The new edition is ready—write for a copy.

Address Inquiries to **GEORGE A. HAWS,** 72 Pine Street New York

Pullman

MODEL K, PRICE, $2000

"Pullmans Are Built for Lasting Service--Not Simply to Sell"

The PULLMAN has been designed with the aim of making it a perfectly balanced car in all its features—not a machine with a good motor and an ill-designed transmission, a good transmission and a poorly designed braking system, a strong frame and a poor steering wheel, but a motor car in which the importance of each feature in the mechanism has been given the study which its relation to the mechanism as a whole demands.

The PULLMAN is a *perfectly balanced* car—a car in which *every detail bears a harmonious relation to other details.*

Many cars have several strong features, but few are designed with a perfection in all the details which, co-ordinated, make a car of *lasting service and minimum upkeep.*

The 1910 models were designed by Gilliard, for ten years on the designing staff of the Benz, Renault and Motobloc factories of Europe.

They are constructed from materials of a quality not used in any machine on the market selling for less than $4,000.00 to $5,000.00. All vital parts, such as transmissions, shafts and details subject to the severest strains and usage, are built of *Chrome-Vanadium* steel, recognized among metallurgists as the greatest "anti-fatigue" material known to science.

The fineness of measurements employed in the workmanship on PULLMANS is unexcelled in any automobile factory.

Ten models on four chassis, $1,650.00 to $4,500.00. Pullman quality, only different sizes and different body designs.

A postal to us brings the literature.

PULLMAN MOTOR CAR CO., YORK, PA.

Licensed under Selden Patent

9/10's OF ALL IGNITION TROUBLES ARE CAUSED BY

wrong magneto lubrication or lack of it. The whitest, highest priced cylinder oil on earth is not good enough for even the cheapest magneto.

Because all cylinder oils—all—every one of them are mineral oils. And there never has been and never will be a pure mineral oil made that won't gum, harden, dry out, collect dirt and clog delicate action points and bearings.

Clogged bearings start 9/10 of all ignition troubles. Don't take our word for this. Scoff all you wish. But just ask the manufacturer of your magneto or commutator.

"OILRIGHT" WITH "3 IN ONE"

3 in One is a clear oil compound of the highest known quality. It is used the world over for lubricating the most delicate mechanisms—Swiss watches, costly scientific instruments, fire-arms, speedometers, commutators, etc.

3 in One absolutely will not gum or harden in any magneto under any condition whatever—never.

3 in One will not dry out in ball bearings or ordinary bearings.

3 in One will not heat up, smoke or burn at any rate of speed—not even 5,000 revolutions per minute.

3 in One is a free flowing, penetrating oil with the right viscosity for any make of High Tension or Low Tension magneto. Will clean out bearings and keep them clean.

3 in One will also clean and polish your car—body top cushions all wood, leather and nickel parts, also prevent tarnish and verdigris on brass parts.

FREE Make a trial at our expense. Send to-day for a generous sample of this great oil compound and learn for yourself exactly what it will do. Special magneto bulletin giving full details also free. ¶ 3 in One is sold by all supply dealers, sporting goods stores, hardware stores, etc., everywhere. Sold only in bottles like illustration—never in bulk. Three sizes, 8 oz., 50c—3 oz., Trial size, 10c. 25c

THREE IN ONE OIL CO.
57 BROADWAY, NEW YORK CITY

THREE IN ONE OIL COMPANY

Please send me immediately generous sample of 3 in One Magneto Oil and Special Magneto Bulletin without cost or obligation.

Name _____
Street _____
City _____
State _____

YEAR RIGHT!

USE AND RECOMMEND

Red Head

Registered U. S. Pat. Off.

SPARK PLUG

ALL STYLES
ALL SIZES
PORCELAIN
OR MICA
$1.00

LEHMAN IGNITION APPARATUS FOR 1910

INTERIOR—TYPE A

INTERIOR TYPE B

STEEL TIMERS

Two Types—A and B

EXTERIOR

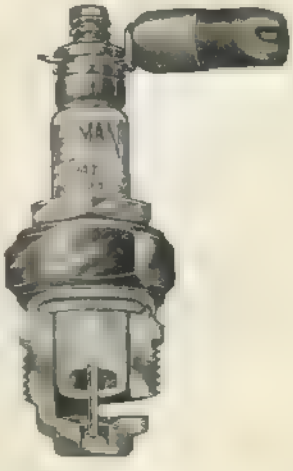
Lehman Spark Plug

Provided with spark length adjustment and cap which prevents accumulation of soot on the insulator.

Cap and insulator are covered by patent No. 741684, granted October 20, 1903. Infringers will be prosecuted.

Suits are now pending in the United States Circuit Court against A. R. Mosler Company and C. F. Splitdorf

Write for Catalog



J. H. Lehman Mfg. Co., Inc., Electrical Engineers & Importers

500 5th Avenue, NEW YORK

Western Office—1256 Michigan Boulevard, Chicago, Ill.

Display Stand—FREE! Get One Right Away!

Actual size, 12″ x 8″, made of strong crystaloid, with easel back to stand on counter or show case, and with cord to hang up if desired. Colors: Silver, Red, Black and White.

THE RONSON WRENCH

Shown in actual colors and size on crimson background.

A HANDSOME, EFFECTIVE PIECE OF WORK

A Silent Salesman of the Best Kind

A POSTAL BRINGS IT RIGHT AWAY

Are you making up your Stock List for Spring? Don't fail to include a **liberal order** for

Ronson Wrenches

A Good Tool for Your Customer and Good Profit for You

We are ready to take good care of you. Write NOW.

MANUFACTURERS AND PATENTEES

THE RONSON SPECIALTY COMPANY

7, 9, 11, 13, 15 Mulberry Street **NEWARK, N. J.**

BEWARE OF IMITATIONS!

GRINNELL "RIST-FIT" AUTO GLOVES

Grinnell

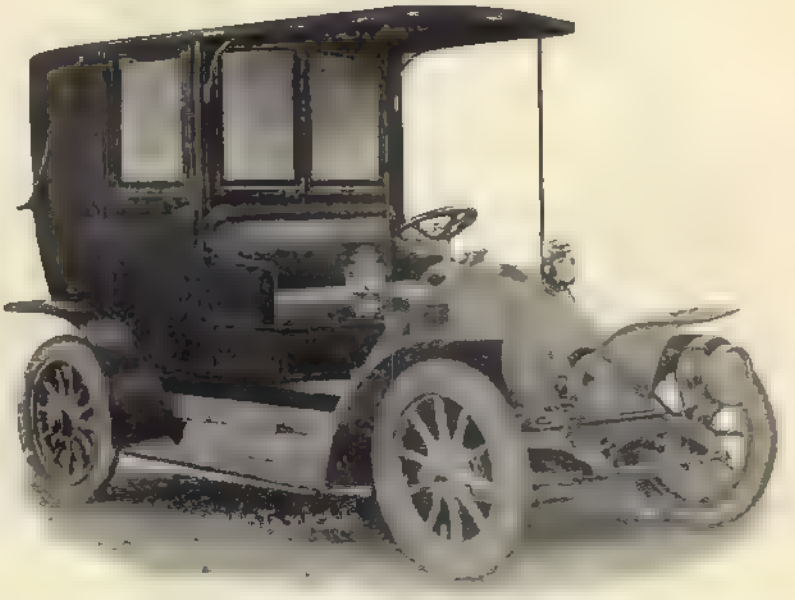
The Coolest Glove for Summer Motoring

Grinnell "Rist-Fit Auto Gloves are ventilated for summer wear by rows of perforations across the back which admit air and keep the hands comfortable.

The patented "Rist-Fit" device holds the glove snug about the wrist, excluding dirt.

Dealers:—We are liberally advertising our winning line of gloves. Grinnell Gloves are by far the most widely known. Handle them, and get your share of the business we are creating. Write at once for our proposition to dealers. Samples on approval, prepaid.

MORRISON-RICKER MFG. CO.
70 BROAD STREET :: :: GRINNELL, IOWA



The THOMAS was the FIRST AMERICAN TAXICAB and is still PRE-EMINENT

Experience accumulated by years of manufacture has developed the THOMAS Model A Taxicab, designed and sold exclusively for that service. The THOMAS combines the most successful design and the highest accuracy and skill in manufacture, hence its maintenance is lower than that of any similar vehicle, and it is

THE MOST PROFITABLE TO OWN AND OPERATE

The superiority of the THOMAS is recognized as was shown by the sales last year, which exceeded those of all other American makes.

The THOMAS is the latest in design and represents all that is best in durability, strength, low maintenance, passenger comfort and beauty of design, as well as the greatest simplicity in operation.

The season for the most profitable cab operation is at hand, and the continuous efficiency of the THOMAS makes for your profit. Your early order means prompt delivery.

THOMAS MOTOR CAB COMPANY

Buffalo, N. Y.

Thor

THE

MOTORCYCLE SUPREME

THOR IV

SINGLE

¶ The Greatest Motorcycle ever presented to the Public. Look for it at the following Shows:

New York, January 8th to 15th, 1910.

Chicago, February 5th to 12th, 1910.

In the meantime, write and secure agency. It's a money getter.

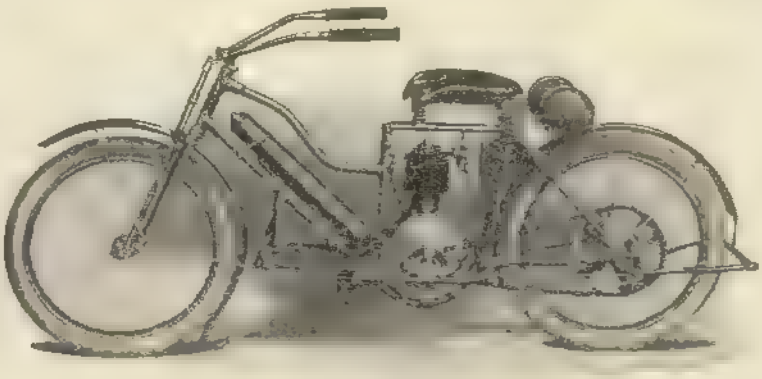
AURORA AUTOMATIC MACHINERY CO.

Thor Building, 1307 Michigan Ave., **CHICAGO, ILL.**

1910 New Era Auto-Cycle

TWO YEARS FROM NOW every rider will want his Auto-Cycle equipped with a Two-Speed Transmission and a Free Motor, Motor started by means of a crank, no pedals, comfortably upholstered Form Seat and Foot Board, which value is Universally Recognized by Experts.

BUT WHY WAIT TWO YEARS? WHY WAIT AT ALL? When to-day you can buy a New Era with a Most Efficient Two-Speed Transmission and Free Motor.



PATENT PENDING

The Excellence of its Material and Beauty of Workmanship were proven in the F. A. M. Endurance Run in which the rider of the New Era was awarded a gold medal; Hills, Sand, Bad Roads, Crowded Streets—all these were easily negotiated by riders of the New Era Auto-Cycle.

LIVE AGENTS, HANDLE AN UP-TO-DATE AUTO-CYCLE. The Two-Speed isn't Simply Coming it's already here, and right here in the New Era Auto-Cycle. Others will follow in our footsteps, but, Mr. Dealer, Isn't it Better to Lead? If you think so, and if you are wise, that is Your Opinion. You will write for an Advance Circular and our Agency Proposition.

We will exhibit in Space No. 614 at the National Automobile Show at New York, January 8 to 15, 1910.

The New Era Auto-Cycle Co.

7 Dale Avenue Dayton, Ohio

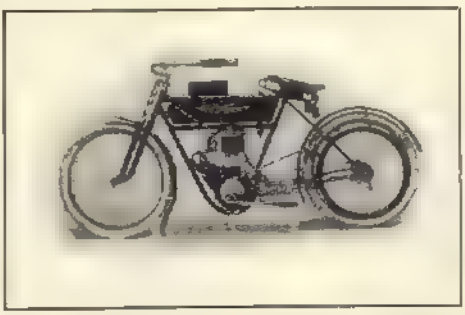
THE TRIUMPHANT R-S MOTORCYCLE

3 H. P. Model 5—Chain Only

With Battery, $210.00
With Magneto, $235.00

The **"R-S"** **is the Best Motorcycle Made**

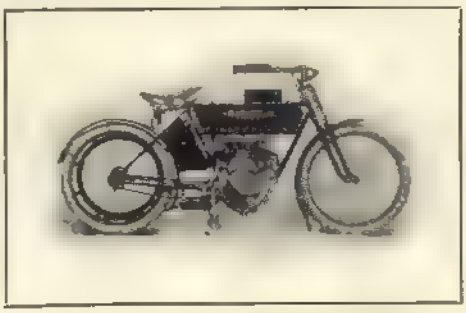
It is Tried and True



4 H. P.—Model 7

Chain or Belt Drive

With Battery, $235
With Magneto, $260



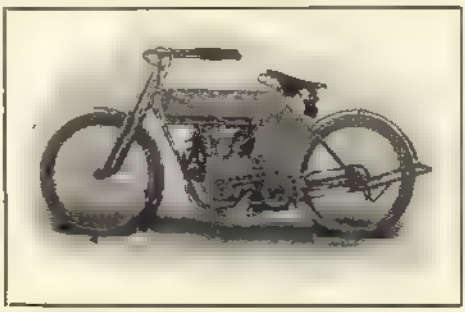
6 H.P.—Model 6

Chain or Belt Drive

With Magneto only
$285

We have reason to be proud of our 1910 quartet of winners.

We have some unoccupied territory.



7 H.P. Model 8

Chain Drive Only

Magneto Only
$325

READING STANDARD COMPANY, READING, PA.

SIMPLICITY — ACCESSIBILITY — ECONOMY

are among the distinguishing features of the

White Gasoline Car

The design of the White Gasoline Car is at least one year in advance of any other American machine. The White possesses all the desirable qualities to be found in other high-grade cars and, in addition, it has certain advantageous features which are not yet embodied in the others. Among these features are simplicity, accessibility and economy.

1. —SIMPLICITY. There are fewer parts to the White than to any other car. Nothing essential has been omitted; well thought-out design has eliminated superfluous parts.

2.—ACCESSIBILITY. Any part can be reached without removing or disturbing any other part.

3.—ECONOMY. Low fuel consumption secured by the use of the "long stroke" engine, four-speed transmission and other refinements. Low cost of up-keep obtained because of simplicity and accessibility, and because the materials are the best ever put into a car of moderate price.

Licensed under Selden Patent

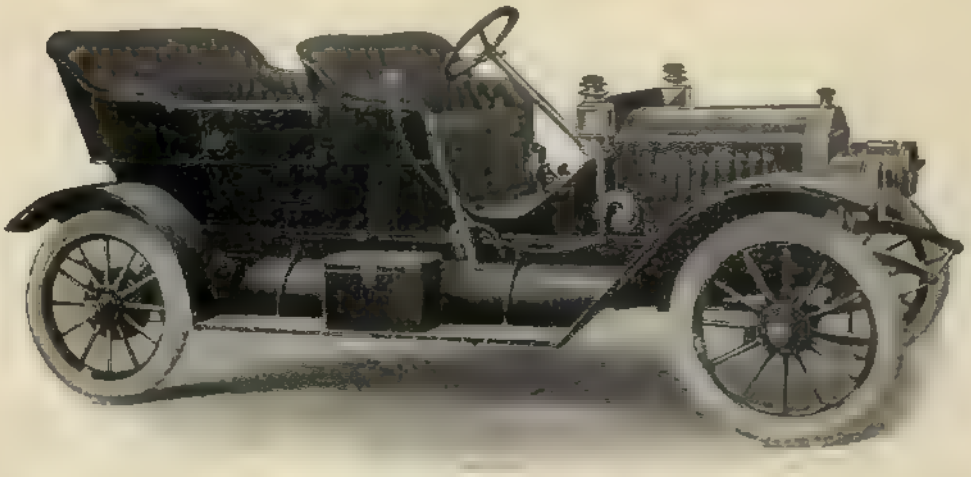
Write for catalog of the White Steam and Gasoline Cars

THE WHITE COMPANY

New York City, Broadway and 62d St
Boston, 320 Newbury St
Philadelphia, 629-33 N. Broad St
Pittsburg, 138-148 Beatty St.

860 East 79th St.
CLEVELAND, OHIO

Toronto, 170 King St., West
Atlanta, 270-12 Marietta St
Chicago, 240 Michigan Ave.
San Francisco, Market St. at Van Ness Avenue



MODEL 36—PRICE, $1275

The LAMBERT

THE CAR THAT ESTABLISHED THE FRICTION-DRIVE DEMAND

Keep that in mind when framing up your plans to make the most of 1910 opportunities.

Friction transmission has ARRIVED. It has proved its greater efficiency. Its greater Simplicity and Economy were always apparent.

The dependable action of every Lambert sold, their unfailing response to every demand for the maximum of power, and their ease of handling and economy of up-keep—these have been the main factors in turning the demand toward friction-drive.

Our five models for 1910 afford the dealer an unusual opportunity to supply ANY demand. Our aim has been to build, as nearly as possible—

A CAR FOR EVERY PURPOSE

From the well-balanced Runabout of racy lines at $900 to the superb Touring Car of luxurious proportions at $1700. Every Lambert fills a special need—meets a popular demand.

In all territory now unoccupied we want representatives for the Lambert Car. We have an unusually attractive offer to make the right kind of men who know enough about automobiles to recognize in the Lambert Car—each of our five models—the biggest value on the 1910 market at the price. In writing, you will please state what cars you now handle and your facilities for representing the Lambert. Address

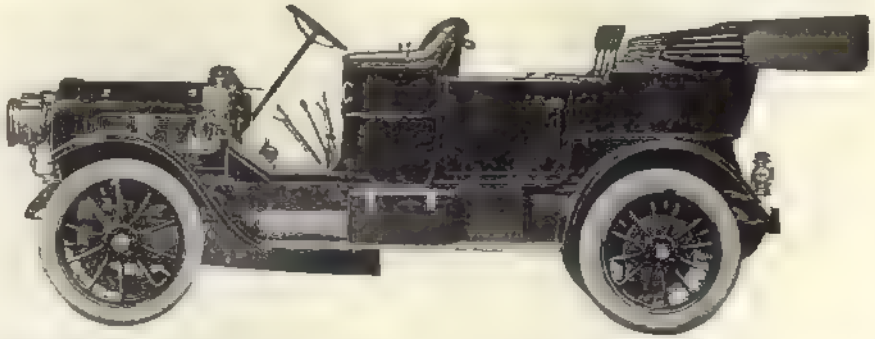
THE BUCKEYE MFG. CO.

1801 Columbus Ave., Anderson, Indiana

The easiest-riding Car in the World

IS THE

White Steam Car



THE WHITE STEAM CAR has many desirable qualities which are not equaled in any other type of car. At all times and under all conditions it is noiseless, absolutely free from vibration, smokeless and odorless. It is easiest on tires. It has unequaled hill-climbing ability. The engine can never be "stalled." It is by far the easiest car to control and it is, therefore, the safest car for passengers as well as for other users of the highway. Either kerosene or gasoline may be used as fuel.

The development of the White Steam Car—the perfection of details, simplification of parts, etc.—has gone on steadily from year to year. As a result, the 1910 White Steamer represents as great an advance over the steam car of a few years ago, as does the 1910 White Gasoline Car compared with gasoline cars designed several years ago.

During the last nine months—from July 1st to date—more White Steamers have been made and delivered to customers than in the corresponding period of any previous year.

Are you familiar with the many desirable features of the 1910 White Steam Car? A postal to us brings a copy of our catalog

THE WHITE COMPANY

860 East 79th St., CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d Street
BOSTON, 320 Newberry Street
PHILADELPHIA, 629-633 N. Broad Street
PITTSBURG, 138-148 Beatty Street
TORONTO, 179 King Street, West
ATLANTA, 120-122 Marietta Street
CHICAGO, 240 Michigan Avenue
SAN FRANCISCO, Market Street at Van Ness Avenue

COLORADO SPRINGS CYCLE CO.
Bicycles
General Repair Work
12 E. Kiowa St.

Colorado Springs, Colo., Oct. 8, 1909.

Mr. L. O. Scott,
Denver, Colo.

Dear Sir:—
In regard to what we think of the Yale, we will say that we think it is the best all-around machine made. Having sold a number of the new models, we find that they are satisfactory in every respect. The thing that commends the Yale to us is that it is very rarely in the repair shop, whereas other firms we know have to carry a large stock of repairs for their respective makes. We do not carry any repairs at all, so seldom are they needed.
Its silence and smooth running are a rare delight.

Yours very truly,
Colorado Springs Cycle Co

E. B. HEAGREN
Bicycles and Motor Cycles
Sundries
427 S. Main Street

Salt Lake City, Utah, Nov 22, 1909.

Mr. L. O. Scott,
Denver, Colo.

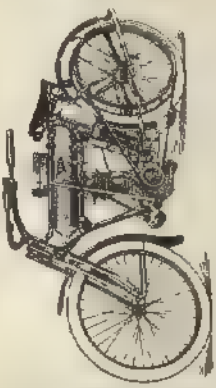
Dear Sir:—
In regard to the Yale agency, I think that I have the best proposition that there is on the market. I would not take a one thousand dollar bill for the agency right now.
I got the twin and single cylinder 1910 models, and say, they are simply great and everybody is stuck on them.
I don't know whether you have heard the news or not, so I will tell you that Art. Anakin is not with the Bicycle Supply Co. any more. He sold his interests to Bing & Brewer
With best regards, I remain,

Yours truly,
E. B. Heagren.

1910 YALE MOTORCYCLES

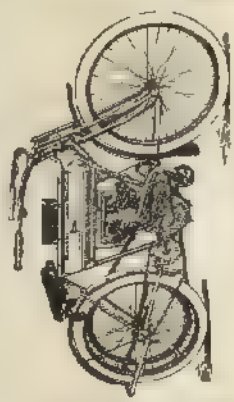
:: IMMEDIATE DELIVERIES ::

3½ H. P. SINGLE, $200



WE ARE not seeking business where price is the only consideration. We want the business of dealers who demand the best, who insist upon actual performance, who know and appreciate the value of a correctly designed motorcycle well executed.

Exhibiting at Chicago Automobile Show, February 5-12. Space 140-141, up stairs in the Annex.



6½ H. P. TWIN, $300.

THE CONSOLIDATED MFG. COMPANY

1710 Fernwood Avenue :: :: Toledo, Ohio

J. E. KIPP
Furniture and Undertaking,
Watches and Jewelry,
Sewing Machines, Bicycles and Supplies

Edgeley, N. D., Oct. 12, 1909.

Mr L. O. Scott,
Denver, Colo.

Dear Sir:—
In reply to your card I would say that as far as I know the Yale Motorcycle is the best machine on the market to-day in its class. I have used or sold five this summer and they are all O. K.
I don't know what you can get them for, but I will order you one shipped to you for $200 You pay the express or freight charges. The best way is by express. It comes some higher, but by freight it is hard to tell when you will get it. I got all of mine by express. I pay about $11.75 here.

Yours truly,
J. E. Kipp.

D. C. MUTH
Bicycle Repairing
New and Second Hand Wheels
712 Eighth Ave.

Greeley, Colo., Oct. 11, 1909.

Mr L. O. Scott,
Denver, Colo.

Dear Sir:—
Your card just received. Will say, in my opinion the 1910 Yale Motorcycle is the best machine on the market. I have sold one here and have a 240 pound man riding it. He has no trouble in going any place that any other machine will go. All of the 1909 machines I have sold are giving perfect satisfaction, and no trouble at all. They are all hill-climbers. I could talk all day about the good points of the Yale, but haven't got much time to write this morning.

Yours very truly,
D. C. Muth.

SEE

The

Artizan

Engine Driven Tire Pump

TRADE ABC MARK

A NECESSITY
for every motor car.

Will Pump from 0 to 500 Pounds (if necessary)

WEIGHT—ONLY 6 POUNDS
LENGTH—ONLY 10 INCHES

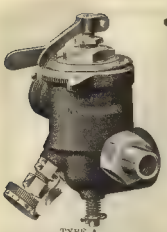
Write for particulars and prices of this trouble saver. Give us make, model and year and we will tell you how to attach to any car.

FOR YOUR GARAGE
Private or Public

The ARTIZAN
Automatic Air Supply System
SAVES Labor, Time and Tires.

ALWAYS READY
Let us tell you about it.

ARTIZAN BRASS COMPANY
872 Lincoln Parkway, Chicago, Ill.
B. M. ASCH, Eastern Distributor
1779 Broadway New York



TYPE A
With sliding throttle controlling the outlet passage. No regulation for lift of disc

Successful Where Others Have Failed

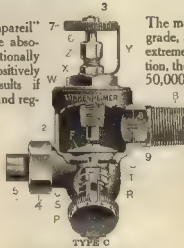
Gasoline engines that could not be made to work satisfactorily have given results when equipped with

LUNKENHEIMER

"Nonpareil" Generator Valves

Lunkenheimer "Nonpareil" Generator Valves are absolutely reliable, exceptionally durable and will positively give satisfactory results if properly connected and regulated.

They are made in a variety of styles and in sizes ranging from ¼ to 2 inches inclusive.



TYPE C
With means for regulating lift of disc and butterfly valve in passage outlet.

The material is of the very highest grade, and the discs are made of an extremely strong bronze composition, the tensile strength being about 50,000 pounds per square inch.

A copy of our Automobile and Motor Boat Specialty Catalogue will be sent upon request. It's free.

Your local dealer can supply them; if not, write us.

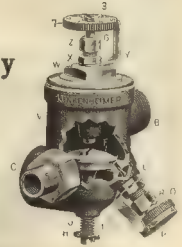
THE Lunkenheimer Company

Largest Manufacturers of High-Grade Engineering Specialties in the World

GENERAL OFFICES AND WORKS
CINCINNATI, OHIO, U. S. A.

BRANCHES:
NEW YORK, 64-68 Fulton Street
CHICAGO, 32 Dearborn Street, cor. Lake
LONDON, S. E., 35 Great Dover Street

199

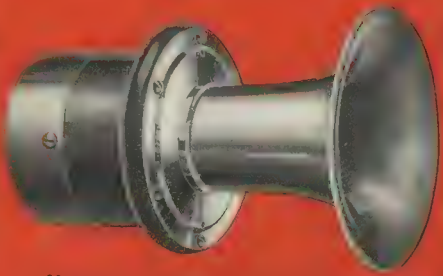


TYPE B
With regulation for lift of disc. No throttle valve.

A New

MONOPLEX

Type "M"



The MONOPLEX Type "M" has been produced to meet the demand for a high-class electric horn of smaller size than the regular MONOPLEX and which combines a forceful tone and substantial construction with a pleasing appearance and a low price.

Fitted with our improved vibrating system, which is now also supplied in our standard MONOPLEX, vanadium steel diaphram and short seamless brass projector.

An efficient and powerful signal for the man who does not want a large horn on his car.

It consumes little current and may be operated by six dry cells or an eight volt storage battery.

Complete with push button and cord, $12.00.

SEND FOR INFORMATION

ATWATER KENT MFG. WORKS

41 N. SIXTH STREET

PHILADELPHIA, PA.

Lead in Local Sales

IF YOU SELL GLOVES you can get the largest part of the local business with GRINNELL GLOVES. They are foremost for quality and most widely known. We are advertising more strongly this year than ever.

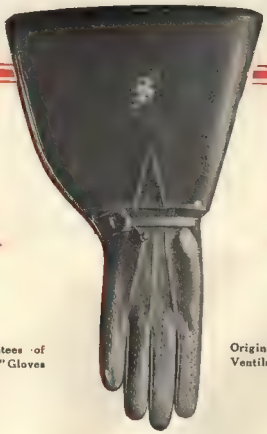
GRINNELL "RIST-FIT" VENTILATED GLOVES

always lead in the introduction of new features of style and comfort. We originated the patented "Rist-Fit" and the VENTILATED BACK.

WRITE FOR PRICES AND SAMPLES

Morrison-Ricker Mfg. Co.

70 Broad Street — Grinnell Iowa



Originators and Patentees of Ventilated and "Rist-Fit" Gloves

Originators and Patentees of Ventilated and "Rist-Fit" Gloves

THERE ISN'T A DOUBT

AS TO THE PRACTICABILITY AND ECONOMY OF

ELECTRIC WELDING

We are welding **automobile parts** for a **large number** of the **manufacturers. Parts,** too, that are **subjected** to the **greatest stress** and upon which **absolute dependence** must be placed. Axles, Gear Casings, Radius and Brake Rods, Pedal Levers, Steering Knuckles, Spring Hangers, Connecting Rods and Propeller Shafts are some of the articles being furnished. Our line of work eliminates the necessity of maintaining expensive forging dies.

MOTORCYCLE AND BICYCLE PARTS

THE STANDARD WELDING CO.

CHICAGO **CLEVELAND** **NEW YORK**

THE DANGER SIGNAL

HAM'S MARS

There is immense satisfaction in having a lamp on your car

THAT STAYS LIT

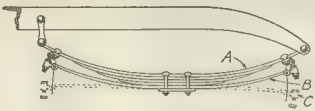
Of course lamps do blow and jar out, but they are not

"Ham" Lamps

The superior construction, close attention to detail, peerless workmanship and finish, coupled with elegance of design, places our products far in advance of competitors.

When you want a Tail Lamp—the best that's made, order **HAM'S MARS** and you will bless the day we introduced it to your notice.

C. T. HAM MFG. COMPANY, ROCHESTER, NEW YORK



DON'T KICK

If the roads are bad and the streets are rough, Have your car equipped with

Scott Governor Springs

and forget it.

¶ The **Scott Governor Spring** fits the springs now on your car without any change whatever. ¶ No holes drilled in frame. ¶ Wheels not taken off. ¶ No part of the car disturbed, marred nor mutilated.

¶ The **Scott Governor Spring** minimizes excessive spring action better than any equipment you have ever seen or tried. ¶ They do what no shock absorber equipment can do. Minimize excessive spring action and preserve the resiliency of the spring. ¶ Automatically adjusts resistance to excessive spring action to meet requirements ¶ Cannot get out of adjustment. ¶ Cannot change its perfect control in any way whatever. ¶ Always on the job ¶ Does its work right.

It's an Economy—Not an Expense

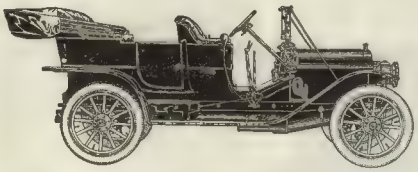
¶ Saves your tires. ¶ Prevents spring breakage ¶ Reduces repair bills and skidding. ¶ Saves several times its cost.

¶ Now ready—our special proposition for manufacturers, dealers and owners.

Scott Governor Spring Co.

3133-35 Lincoln Avenue :: :: :: :: Chicago, Ill.

Distributors for Pacific Coast:—Fox Co., Call Bldg., San Francisco, Cal.



Dorris **TOURING CAR**

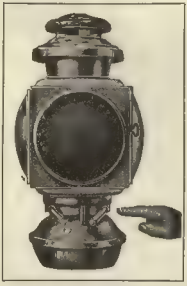
Price, $2500

Equipt with

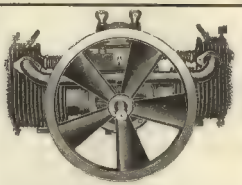
Top	**Tire Carriers**	**Prest-O-Lite Tank**
Speedometer	**Tools**	**Brass Folding Shield**

Dorris Motor Car Company :: St. Louis, Mo.

OUR reputation as the largest producers of lamps in the world is sustained by every lamp leaving our factory.



EDMUNDS & JONES MFG. CO.
DETROIT, MICH.



OPPOSED TYPE MOTORS

built in sizes 4½ x 4½, 4¾ x 4¾ 5 x 4¾ and 5 x 5, air or water cooled.

Catalogue for the asking

MONARCH MOTOR MFG. CO.
3145 N. Halsted St., Chicago

LaPorte BODIES

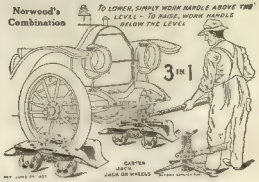
First-class Bodies, either wood or metal, painted and upholstered complete

We can furnish dashes in Mahogany, Walnut, etc., brass trimmed or plain.

ROADSTER BODIES and AUTOMOBILE TOPS
A SPECIALTY

LaPorte Carriage Co.
LaPorte, Indiana

Norwood's Combination



Manufacturers, Shop and Garage Owners Take Notice!

TIME IS MONEY!!

Don't lift or drag your cars around; use a Norwood Caster

You can handle your cars either with or without their wheels.

The Best, Simplest, Lightest, Smallest and Most Satisfactory Device for Handling Automobiles That Has Ever Been Introduced.

Frame one solid piece—Ball-Bearing Casters delicately respond, permitting the Auto to be turned or moved very easily in any direction.

Discount to the trade. *Write for Circula*

Auto and Accessories Mfg. Co.
1416 Madison Ave. Baltimore Md.

P.S. We also make a permanent turntable, unequaled in price and efficiency.

TIRES

THROUGH a secret process it has become possible to manufacture a tire surpassed by nothing that money, brains or human skill can produce, at the saving indicated on the table below.

We sell these tires unguaranteed or guaranteed. In other sizes we sell seconds of various makes at an average saving of 40 per cent.

Automobile Tire Company's

INDEPENDENT and IMPERIAL TIRES

(Straight Tread) (Non-Skid Tread)

CLINCHERS, DUNLOPS & Q. D. CLINCHERS

Size	OUR PRICES Unguaranteed	Guaranteed	Standard List
28 x 3	$11 70	$14 60	$19 65
30 x 3	12 60	15 85	21 10
30 x 3½	18 05	25 25	31 10
32 x 3½	19 80	24 75	33 00
34 x 3½	21 60	27 00	36 00
30 x 4	25 26	31 64	42 10
31 x 4	26 16	32 70	43 60
32 x 4	27 12	33 90	45 20
33 x 4	28 14	35 18	46 90
34 x 4	28 98	36 23	48 30
36 x 4	30 87	38 59	51 45
34 x 4½	36 33	45 29	61 30

Flap to use on Q. D. Rims $1.50 extra

Write for prices of other sizes. State style and make of rim

These tires have enjoyed the greatest sale among dealers that ever occurred, and are rapidly growing every day. Money refunded on goods returned intact within a week and shipped with privilege of examination.

Write for Trade Prices

AUTOMOBILE TIRE COMPANY, Inc.

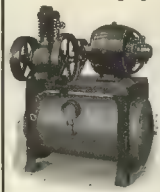
1625 Broadway, New York

Phone Columbus 8365-8367 Room No. 16

Ed. C. Griffith, Pres. (Old Goodrich Bldg.)

The Oldest Automobile Tire Jobbing Concern in the U. S. and the Largest in the World

Your entire Pumping Plant in one convenient unit



This handsome garage set consists of a Gardner Compressor connected to a motor, both mounted on a cast iron table underneath which is placed the air tank, all piped to compressor. Outfit is all ready for electrical connections to motor. It's compact, handsome, convenient and accessible.

Ask for details, also for special garage pump booklet.

Gardner's Governor Works

Quincy, Ill.

DON'T GUESS AT GOODNESS!!

especially in the motor line.

BEILFUSS MOTORS

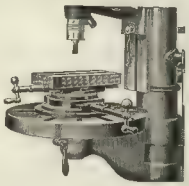
are built for those buyers who appreciate excellence in design, material and workmanship

Air Cooled - - - 10 12 H. P.
Water Cooled, 10-12 and 18-20 H.P.

The manufacturer who wants to increase the service and reliability of his cars, cannot find a better engine than the BEILFUSS.

Deliveries Guaranteed. *Correspondence Solicited*

THE BEILFUSS MOTOR CO.
LANSING, MICH.



The **"Davis" Milling Attachment and Compound Table** for the drill press for garage, repair and machine shops. : : :

WRITE FOR PRICES

The Hinckley Machine Works
Hinckley, Ill.

Automobile Tires

Clincher and Quick Detachable

All New Goods, all High Grade Makes. Small Ad, Small Prices. Money Refunded at once if dissatisfied on receipt of goods. We are not going to tell you that we have contracts with Factories, for they are well able to sell their goods themselves. Our PRICES do the talking. Your money refunded, provided you do not use the goods. Before buying elsewhere let us give you expert information on tires. We are in the business 15 years. Even if you don't buy from us we will be glad to correspond with you. Will give you the best of our advice.

	Shoe	Tube
28 x 2½	$ 6.50	$2.00
30 x 2½	6.00	2.00
28 x 3	9.50	2.25
30 x 3	10.00	2.50
34 x 3	8.00	2.00
36 x 3	10.00	2.00
30 x 3½	13.00	3.00
32 x 3½	14.00	3.50
34 x 3½	14.00	3.50
36 x 3½	12.00	3.00
30 x 4	16.50	3.50
32 x 4	17.00	3.75
34 x 4	19.00	4.00
36 x 4	17.00	3.50
32 x 4½	15.00	3.50
34 x 4½	19.00	4.00
36 x 4½	19.00	3.50
34 x 5	18.00	4.00
36 x 5	19.00	4.00

GOODYEAR, DUNLOP, MICHELIN TYPE

30 x 3½	$15.00
30 x 4	17 00
32 x 3½	17.00
34 x 3½	17.00
34 x 4	19.00
32 x 4	17.00

Special Tires to fit 30 x 3 Clincher Rims, Brand New Shoe and Tube complete, $6.50 each.

Mail Orders Especially

A. H. KASNER

111 Chambers St., N. Y. City

Largest Tire Dealers in U. S.

FAL-CAR

35-40 $1,750

One Chassis—Three Bodies—One Price

The FAL-CAR is "Custom Made"

Just as the man who demands the utmost goes to the custom tailor for his clothes, so the man who appreciates motor car value will seek a car which is born in a **quality** rather than a quantity factory. In either case the purchaser recognizes that nothing can supplant the individual attention of the expert workman.

The Fal-Car is made in a well-equipped factory and in sufficient quantities to earn all possible price concessions in materials.

But the **vital point** is that nothing is left to machines that can be better done and **should be done by HAND.**

The result of this policy becomes apparent in the freedom from mechanical troubles and long service ability of the Fal-Car.

Compare the Fal-Car specifications with cars of higher prices. Add to this the genuine value of craftsman workmanship and you will begin to appreciate the reasons for the Fal-Car's instant success.

Our catalog is waiting for your request.

FAL MOTOR CO.

171 North May Street
Chicago, Ill.

HERRESHOFF

NATIONAL CHAMPION

"A Car Worthy of its Name"

1911 Models Now Ready

Our 1911 agency contract for all territory not assigned—will be sent upon request Beautiful Catalog (with complete Specifications) is just off the press—let us send it to you. Address Department G.

Touring Car—Tourabout—Runabout—**$1500**

Herreshoff Motor Company

General Offices and Factories, DETROIT, MICH.

United States District Court

Sixth Judicial District of New Mexico

ALFORD W. COOLEY, Judge
CHARLES P. DOWNS, Clerk

OFFICE OF THE CLERK
ALAMOGORDO, NEW MEXICO

June 23, 1910.

GYREX MFG. CO.,
1777 Broadway, New York City.

GENTLEMEN. The Gyrex has arrived and been given a trial on my Chalmers "30." You are modest in your claims for the good qualities of this little mixer. You claim it will increase efficiency, decrease fuel consumption, produce even explosions, give complete combustion, eliminate overheating and in resse flexibility on the high gear. After attaching same to my car—which I did myself in fifteen minutes—I thought I had a new car just from the factory. My car has run over 5000 miles without any repairs, and I thought same needed an overhauling, because it was doing poor work. I find all I needed was a Gyrex. It does all you claim for it, and I am sure it is the best investment an owner can make.

Respectfully,
CHAS. P. DOWNS.

$3 $3

The above is an unsolicited letter from a customer.

We want you to try one on your car, and will make you this offer:—

"Upon receipt of price, we will mail a Gyrex with the understanding that if it does not prove its worth it can be returned within 10 days and money back."

To insure perfect fit, send name of car, model and year or inside diameter of intake pipe at carbureter flange.

We will gladly furnish descriptive matter.

GYREX MFG. COMPANY, Inc.

1777 Broadway : NEW YORK CITY

4 CYLINDERS
20 HORSE-POWER
SLIDING GEARS
BOSCH MAGNETO

$750

(F. O. B. Detroit), including three oil lamps, horn and tools. Top, gas lamps and tank, speedometer—extra.

25 cents a day is all it costs most people to run this car

There are 7500 Hupmobile owners in America.

The great majority keep their cars at home and run them for about 25 cts. a day.

That means everything—oil, gasoline, repairs—everything.

You may moralize all you like about the expense of keeping automobiles, but you'll not find a Hupmobile owner who will admit that his car is an expense at all.

At 25 cts. a day, he maintains that his Hupmobile is cheaper than street cars—infinitely less expensive than a horse.

Cheaper because it covers so much more ground.

An economy because it enables the owner to do two or three times as much work and still have leisure.

The Hupmobile is just the right size to save money in first cost; and it saves money because it is just the right size on tires, gasoline and repairs.

And isn't it the handsomest, smartest car of its type in the market?

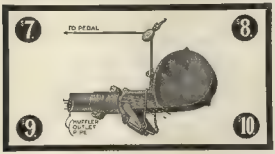
At least 100,000 more people can afford to own a Hupmobile—in the sense that it would prove itself an actual investment in time saved and the pleasure it would bring.

Chat with a Hupmobile owner (doubtless your acquaintances include one or more). Note his enthusiastic talk. Then look up the Hupmobile dealer; or write for the catalog.

Hupp Motor Car Company Department A DETROIT, MICH.

Licensed Under Selden Patent

JERICHO
THE PERFECT MOTOR CAR SIGNAL



The necessity for a really efficient Motor Car Signal comes oftenest at the unexpected moment, when *both hands are required to control the car.*

A JERICHO HORN

is *particularly adapted* to such emergencies — because it is *operated by foot power.*

How easy a matter, and how natural an operation, for the foot to depress a pedal as you gather yourself together for quick action.

In such an effort, the brain, the hands, the feet, operate in unison, and if the signal employed be a JERICHO, you issue simultaneously a fair and rational warning, equal to the emergency, while in no way detracting from your faculty of control.

Once equipped with the efficient JERICHO, you are no longer in anticipation of disaster. You experience a *mental freedom* — a *fuller enjoyment* of your car — and *increased efficiency* in its operation.

Strong arguments in its favor, you must concede. There are others equally strong. Have your dealer tell you about them, or write direct to us for folder.

The Randall-Faichney Co.
BOSTON
U. S. A.

Makers of "B-LINE" OIL and GREASE GUNS

¶ Anteaters were voted deadly dull and stupid by the OUTING staff until Charles Livingston Bull returned from South America. His story, beautifully illustrated, is passed on to you in the September issue.

¶ After you finish it you will find some mighty interesting articles on THE PASSING OF OUR BIG GAME, autumn hunting and fishing, the new game of football, mechanical tips to the auto buyer and a dozen other topics having to do with the out-of-doors.

¶ All news-stands, 25 cents. $3.00 a year. Send fifty cents in stamps to-day for three months' trial subscription.

Liberal offer to local representatives. Write for terms.

OUTING PUBLISHING COMPANY
315 FIFTH AVENUE - - - - NEW YORK CITY

Moline

Wins Over Every Car

IN THE

1910 Glidden Tour

¶ This is how the record of each car stood, regardless of the division it was entered in, at the end of the 2850 mile run.

Final Score of the 11 Cars that Finished

No.	Name	H. P.	Road Score	Tech. Exam.	Total Score	Brake Test	Price
100	MOLINE	35	12	7	19	perfect	$1600
107	Competitor	30	43	8	51	perfect	1575
102	MOLINE	35	62	2	64	1	1600
1	Competitor	60	9	84	93	64	3500
5	Competitor	40	39	77	116	56	1500
7	Competitor	30	69	140	209	35	1525
101	MOLINE	35	478	3	481	perfect	1600
2	Competitor	60	730	86	806	66	2900
103	Competitor	40	1382	660	2024	133	2500
10	Competitor	45	1855	392	2247	110	2500
15	Competitor	40	2145	269	2414	180	2250

¶ From the table it will be seen that the Moline was a **decisive winner.**

¶ But it achieved additional laurels which mean a good deal to the purchaser.

¶ It was in the best **mechanical condition** of any car in the entire tour at the end of the run. That is, it stood the strain of this strenuous tour **better than any other car.** (See score in Technical Examination column).

¶ The total technical penalties of the three Molines **were less than any other** single car (except one).

¶ All three cars finished with the official seals on their tool bags placed there at the start. No others did this.

¶ Not a single extra repair part was carried. No other car **dared** to do this

¶ Write for Booklet 37 "Story of the Tour" It will give you some interesting facts.

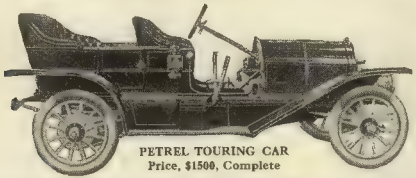
Some Excellent Territory Open for Dealers

MOLINE AUTOMOBILE CO.

37 Root Street Licensed under Selden Patent **East Moline Ill**

PETREL MOTOR CARS

THE CARS OF ABSOLUTE VALUE



PETREL TOURING CAR
Price, $1500, Complete

To own a PETREL car displays sound judgment in choosing something distinctly above the ordinary,—something that carries the impression of a knowledge of what is BEST in motor car construction.

PETREL CARS are in all ways cars of distinctive worth,—sturdy, substantial and powerful,—graceful and elegant in all their appointments, smooth, easy and economical in operation; lowest in first cost, considering power, quality and performance. The lightness, flexibility and great pulling power of the WAITE FRICTION DRIVE give the PETREL CAR unequaled ability to climb hills and negotiate bad roads.

Roadster	$1350, complete
Toy Tonneau	1500, complete
Touring Car	1500, complete

Get the full facts—inspect the models—have a demonstration!! Our catalogue is just brimful of interest,—write for it, to-day

PETREL MOTOR CAR CO., 460-480 Virginia St., Milwaukee, Wis.

"THE PIONEERS"

ELECTRO-CHEMICAL ENGRAVING CO.

MAKERS OF METAL PLATES

FOR ALL KINDS OF MACHINES & ADVERTISEMENTS, CLOCK AND METER DIALS, SCALES, METAL SIGNS, ETC

TRADE MARK E.C.E. CO.

450-458 19TH ST.
BROOKLYN, N.Y.

ESTABLISHED 1900

¶ We build Transmissions right in a factory with new equipment and a live organization. We can furnish our own designs or build to your designs. Differentials, Steering Gears, and self-lubricating dust-proof Universal Joints are also specialties of ours. Write

Widmer Machine Works
9-11 Canal Place
New York City

6 MY NAME 60
STORAGE BATTERY

GET OUR 100% GUARANTEED PROFIT IDEA ON STORAGE BATTERIES. ✱ RETAILS FOR $65.00.

OUR CATALOG IS AN ENCYCLOPEDIA OF AUTOMOBILE SUPPLIES. WRITE DEPT. T FOR A COPY.

MOTOR CAR SUPPLY CO.
1451 MICHIGAN AVE.
CHICAGO

Lamp Worries Vanish When Solars Are Used

They represent the maximum of light, the maximum of service, the maximum of beauty, and the minimum of trouble.

And the man who rides behind them has a feeling of confidence that no other lamp equipment brings. For he knows that his Solars can always be depended on to show the way clear and bright.

The maker of your car will furnish

Solar Lamps

if you insist. Most of the high-grade American cars are regularly equipped with them, anyway.

Don't take ordinary lamps just to save the manufacturer a little money. Insist on his giving you the same lamps he uses on the car he drives himself.

BADGER BRASS MFG. COMPANY

Kenosha, Wis. **New York City**

1911 Bergdoll

"30"

BACKED BY MILLIONS

$1,500

The Bergdoll "30" is the only popular priced car on the market which embodies such high class features as:

Continental Quick Detachable Demountable Rims
Livingston Cellular Radiator **Schwarz Artillery Wheels**
Bosch Magneto **Pressed Steel Rear Axle Housing**
R. I. V. Ball Bearings Throughout Motor and Transmission
Gray and Davis Lamp Equipment and Prest-O-Lite Tank

and sold with a warranty for a period of one year, covering material and workmanship of all parts of the car.

THIS WARRANTY COVERS SPRINGS

Members of our organization have for years been associated in similar capacities with some of the foremost motor car manufacturing concerns in the United States.

Our President, Mr. Louis J. Bergdoll, needs no introduction to the Automobile World, and others in charge of our plant are such well known men as E. C. Johnson, Philip S. Malickson, William E. Haupt, C. A. MacDonald and O. A. Bickel.

Our Factory and Equipment is Modern and Complete in Every Detail

Complete description and specifications of our car appear in our advance folder

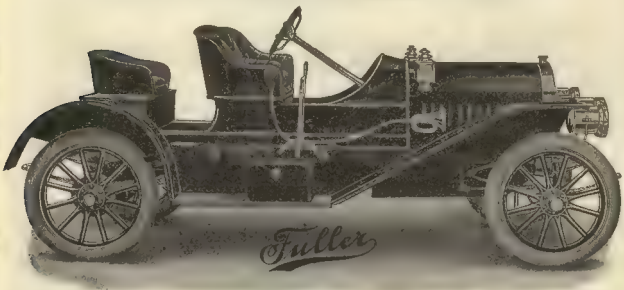
LOUIS J. BERGDOLL MOTOR COMPANY

Dept. "S" 31st and Dauphin Sts., PHILADELPHIA, PA.

THE FULLER

A Representative Type of America's Best Production

Pneumatic and solid tire cars at prices ranging from $775.00 to $1165.00
Two and four-cylinder cars, both pleasure and commercial



Model "30" Roadster

Body—Roadster design, with single rumble seat.
Motor—Four-cylinder, vertical, cast en bloc, 3¼-inch bore, 4½-inch stroke, 25-30 horsepower. Cylinders, piston, piston rings, piston pins, crank shaft, cam shaft and valve stems are ground. The motor is water cooled, circulation by the thermo-syphon system. Lubrication by circulating oil system, operated by plunger pump driven by cam. Crank case is divided so as to maintain the same level of oil for each cylinder.
Transmission—Silent planetary type, two speeds forward and reverse, multiple disc clutch.
Motor Control—Shark and throttle levers on steering wheel.
Drive—Shaft drive with bevel gear.
Ignition—Jump spark, dry cells.
Carburetor—Float feed type.
Brakes—External hub brakes on rear wheels operated by foot pedal. Expanding internal hub brakes operated by hand lever.
Weight—1800 lbs.
Wheel Base—100 inches.
Tread—56 inches.
Frame—Pressed steel.
Front Axle—"I" beam.
Springs—Full elliptic front and rear.
Gasoline Capacity—Twelve gallons.
Tires—30 x 3½ inches.
Equipment—Side oil lamps, tail lamp, horn, jack, tools, tire repair kit, pump and top irons.

Price, $1065.00. With Touring Body, $1165.00

Style, simplicity, efficiency, reliability and quietness are the conspicuous features. If you are in search of these qualities, any comparison you may make MUST confirm the fact that the "Fuller" is the greatest value the automobile world affords.

Investigate—find out for yourself. Send for catalogue.

FULLER BUGGY COMPANY, (Dept. A) **Jackson, Mich.**

Licensed under Selden Patent

SPECIALTIES FOR THE AUTO TRADE

THE MAXIMUS TIMER

(Note self-cleaning feature.) Admittedly the best timer yet brought out.

THE COPPERHEAD PLUG]

(Best Dollar Plug.)

A 1911 product just coming through. Imported Porcelain Extra high grade, finely made, handsomely finished and fully warranted. List, $1.00

MAXIMUS GREASE GUN

Piston ring construction, with rings ground to perfect fit. A perfect tool. List, $4.00.

BLUE RIBBON EXHAUST HORN

A four-tone chime of the highest grade, solid brass, sixteen inches long and 2½ inches in diameter. Guaranteed not to shriek on high speed and to be perfect in tone, material and workmanship. Complete, with Butterfly exhaust valve and all-brass foot pedal. List, each, complete, $10.00.

CLOVERLEAF CLOCK

(For autos and motorcycles)

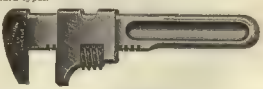
Neat and attractive; well made well finished and fully warranted. List, each, $3.50.

METERS

Oldest and best known line of ampere and volt meters, wide range of styles and sizes, both pocket and switchboard types.

ELECTRIC LAMPS

High-grade headlights, side-lights and tail-lights in electric. High class and at low prices.



B-R WRENCH

A complete line of auto and machinists' tools. High-class assortment of auto tool rolls.

Manufacturer for Auto Jobber and Dealer

THE BECKLEY-RALSTON COMPANY

80-82-84 Michigan Avenue **CHICAGO**

ATTENTION! Motor Car Builders!

Manufacturing Details Relieved Product Improved

We specialize in the production of machine parts, such as

Pistons, Piston Rings, Piston Pins, Motor Gears, Transmission Gears, Hardened and Ground Parts.

All to your specifications where required. We offer you a better product at a consistent price and help you out with your manufacturing details.

Try us on Helical Cut Motor Gears and let us solve the motor gear problem for you.

Bearing Troubles Eliminated

Our improved system of die casting and the use of only the highest grades of bearing metals enables us to offer you a die cast bearing proposition of superior merit.

We furnish die cast bearing bushings to your specifications in any of the high-grade motor babbitts or Genuine Parsons White Brass.

Will You Send us Your Blue Prints for Estimates?

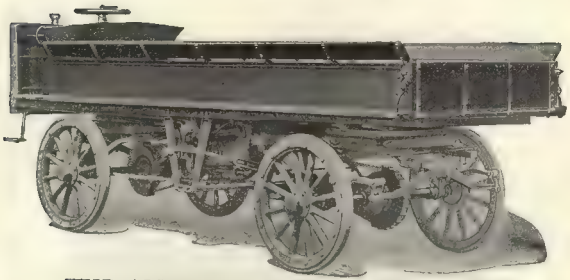
Garage Labor Lightened

FOR THE GARAGE

Designed especially for garage use, our line of Belt and Motor Drive Air Compressors, for tire inflating and cleaning purposes, lighten labor in the garage and save you money. Single and Three cylinder styles.

A post card brings a circular.

The F. W. Spacke Machine Co.
INDIANAPOLIS, IND.



THE AMERICAN STANDARD TRUCK

Patent Four-Wheel Drive and Double Steer

—AGENTS—

Do you realize that the MOTOR TRUCK BUSINESS is coming to the front fast? That's where your money awaits you in the Future. Do you know that Statistics show TWENTY-FIVE Horse-Drawn Commercial Vehicles in use as against ONE pleasure Vehicle. This same condition of affairs will exist in MOTOR-DRIVEN VEHICLES and is coming QUICK.

ARE YOU GOING TO GET SOME OF THE CREAM? If so, you must fortify yourself NOW by taking on a PERFECTLY RELIABLE COMMERCIAL MOTOR VEHICLE.

The AMERICAN STANDARD PATENT DOUBLE DRIVE AND DOUBLE STEER TRUCKS have solved the problem in Motor Truck Construction.

"ITS POWER IS APPLIED TO ALL FOUR WHEELS."

"ITS LOAD IS CARRIED OVER ALL FOUR WHEELS."

"ITS TURNING IN HALF THE SPACE REQUIRED BY OTHER MAKES" and several other distinctive features found only in itself enable it to give PERFECT SERVICE THE YEAR 'ROUND.

This is THE TRUCK you have waited for. One that you can offer to your prospective buyer and know that you have not only given him VALUE RECEIVED but have sold him a PERFECTLY DEPENDABLE Truck.

The AMERICAN STANDARD has Revolutionized the Commercial Vehicle and it is said by those who know—TO BE IN A CLASS BY ITSELF.

Write AT ONCE for our Agents' BIG MONEY-MAKING PROPOSITION before it is TOO LATE as the WISE ONES are grasping the situation while the territory is open.

THE AMERICAN MOTOR TRUCK CO.

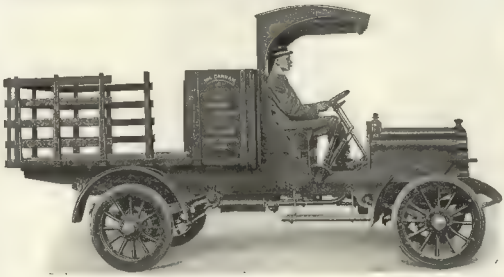
OF MICHIGAN

General Sales Agents for American Standard Trucks, Patent Double Drive and Double Steer

Dept. C. General Offices, 1016-1017 Ford Bldg., DETROIT, MICHIGAN

At Last!
A REAL COMMERCIAL TRUCK

One that insures uninterrupted service at minimum cost of operation



Choice of Platform Stake, Paneled or Covered Express Bodies

$1950 30 H. P. Four Cylinder, Four Cycle Motor; Progressive Type sliding Gear Transmission; Price includes High Tension Magneto, Full lamp equipment, etc.; is in fact for the truck ready for service **$1950**

CASS MOTOR TRUCKS

Right at the start let us give our definition of the words "COMMERCIAL TRUCK"! Here it is:

"One that insures uninterrupted service at minimum cost of operation"

This means a truck that is fundamentally RIGHT. It bespeaks Correct Design—Highest Grade Materials, it means Simplicity—Ease of Operation—Accessibility—Ample Power—Low Cost of Maintenance. It means provision for overloads and a generous factor of safety throughout.

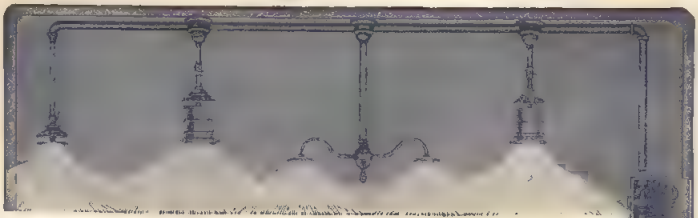
As evidence that we have realized this ideal, we submit the following detailed specifications:

CARRYING CAPACITY—Rated one ton with 60 per cent emergency overload.
LOAD SPACE—7' x 5'.
BODY—Four standard types, viz., panel, open express, covered express and platform with stakes; special panel bodies furnished to order at actual additional cost; inside dimensions of panel body, 4' x 8' and the others are all 5' x 8'.
FRAME—4" channel steel.
LENGTH OF FRAME—102".
WIDTH OF FRAME OUTSIDE—36".
WHEELS—Schwarz patent wood wheels, 2" spokes.
TREAD—56".
TIRES—Solid rubber Diamond; front 34" x 3", rear 36" x 4".
FRONT AXLE—1½ x 2½" drop forged from special axle steel.
REAR AXLE—2" square special hammered steel.
AXLE BEARINGS—Timken, front and rear.
FRONT SPRINGS—34" wide x 47" long, semi-elliptic.
REAR SIDE SPRINGS—2½" wide x 40" long, platform type.
CROSS SPRING—2½" wide x 28" long.
STEERING GEAR—Irreversible. Worm and nut type specially built for heavy truck service.
BRAKES—Four—all acting on rear wheels; two external, 24" x 1¼", and two internal 24" x 10"; external being service brakes and lined with asbestos lining, internal, emergency asbestos lined and directly connected to hand lever.

MOTOR—Four cylinder, vertical, four cycle, water-cooled, cylinders cast en-bloc; bore 4", stroke 4½". Schebler float-feed carburetor; self-contained outer, spiral gear driven. Motor located under hood.
GAS TANK—Galvanized iron, double partition, having capacity of 12 gallons, with patent strainer and connections for reserve supply of three gallons.
HORSE POWER—30, actual brake test.
IGNITION—Jump spark, high tension magneto with dry cells.
COOLING SYSTEM—Thermo-Syphon through vertical tube radiator and 15-inch belt driven fan, inlet 2", outlet 2½".
TRANSMISSION—Sliding gear progressive type, enclosed in dust and oil-proof case.
DRIVE—Six to one on high gear; Diamond roller chain ¾" wide, one inch pitch from 14 tooth cast steel sprockets on jack shafts to 49 tooth-hardened steel sprockets riveted to hub drums.
CLUTCH—Pressed steel cone 24" leather faced, spring tension.
CONTROL—Throttle lever on steering column; gear shifting and emergency brake levers at right of driver's seat; one foot pedal operating both clutch and service brakes.
WEIGHT OF CHASSIS—3,500 lbs.
EQUIPMENT—Two side oil lamps, tail lamp, horn; tool kit including oil can, wrenches, pliers, screw drivers, etc., and jack.

IMPORTANT. We are focusing our entire organization, equipment and capital on the production of ONE TON trucks. We build no other size. This one chassis, may however, be equipped with a variety of bodies. Our Catalogue shows the various styles. When the merit of our proposition is fully understood, the agency for the Cass One Ton Motor Truck will be most eagerly sought. Will you be one of those to investigate early? Suppose you write now, to

CASS MOTOR TRUCK CO., 1025 Lapeer Ave., Port Huron, Mich.



No. 53 Price....$8.40
500 Candle Power

No. 57 Price ..$16.80
1000 Candle Power

No. 102 Price $16.80
1000 Candle Power.

No. 58 Price .$11.20
500 Candle Power.

No 101
500 Candle Power.
Price $8.15

The Acme Lighting System Installed

Permitted by the National Board of Fire Underwriters

The Acme Airlight Gas System is so named because it burns 96% air to 4% gasoline gas. It is an independent gas plant in itself, in which all the gas is made at one central point, the Generator, and piped through galvanized steel pipe to the lamps, where it is lighted with a match the same as city gas. The tank containing gasoline can be placed out of doors or any place to be convenient. It is attached to the Generator by one-eighth inch hollow wire, which conveys the gasoline to the Generator; as the Generator is generally placed just inside the back wall of the building, there is never any gasoline in the building and thus all danger is eliminated

CONSTRUCTION

The Acme Generator, as well as the entire system and equipment is made of the very best material obtainable, is absolutely non-leakable and non-carbonizing. The Generator is so constructed that it is practically one piece, and yet it can be taken apart easily and new parts put in when necessary

ECONOMY.

The Acme Airlight Gas System will supply better gas and better light for any place than any other system or method of lighting. It utilizes every atom of the light giving properties of gasoline and uses a larger percentage of air than other generators owing to the fact that combustion in this Generator is absolutely perfect One 500 C P Airlight mantle on this system will burn 35 to 50 hours on one gallon of gasoline Five 500 C P mantles will light a room 20 feet wide and 80 to 100 feet long four hours a night twenty-six nights a month, for $1.82 with gasoline at 15 cents per gallon.

Electricity at the prevailing rates would cost for the same time and same amount of light, using enclosed arc lamps of 500 C P each, $20.80 at 10c per kilowatt. Gas at $1 00 per thousand feet, using gas arcs, would cost $13.20 for the same time and same candle power Besides economy, many other points are in favor of the Solar Gas system. The quality of light is much better, cloths and colors can be matched under it the same as by daylight; it does not injure the eyes, the gas is not a narcotic and therefore is non-asphyxiating There are no deadly live wires around to endanger life; in fact there is every reason why an up-to-date merchant should have this system, and not one legitimate objection can be advanced against it.

No. 57 1000 Candle Power
Inside Lamp
Price $16.80

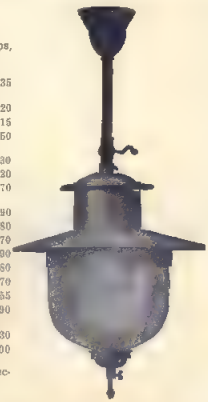
PRICE LIST.

The systems on which we quote prices as given below consist of 2 lamps, generator, 6-gallon tank and equipment, 40 feet service pipe and fittings.

No. 101	System complete with 2 No. 101 lamps	$ 87.35
No. 101	Each additional lamp and 20 feet pipe with connections to add to above system	15.20
No. 101	Lamp only (1 mantle)	8.15
No. 58	System complete with 2 No 58 lamps	93.50
No. 58	Each additional lamp and 20 feet pipe and connections to add to above system	18.30
No. 58	Lamp only (1 mantle)	11.20
No. 102	System complete with 2 No. 102 lamps	104 70
No. 102	Each additional lamp and 20 feet pipe with connections to add to above	23 90
No. 102	Lamp only	16.80
No. 57	System complete with 2 No 57 lamps	104.70
No. 57	Each additional lamp and 20 feet pipe with connections	23.90
No. 57	Lamp only	16.80
No. 53	System complete with 2 No. 53 3-mantle lamps	104 70
No. 53	System complete with 2 No. 53 2-mantle lamps	98 35
No. 53	System complete with 2 No. 53 lamps	87.90
No. 56	1 No. 560 outside lamp and 20 feet pipe to add to any of above systems	32.30
No. 56	Lamp only	24.00

To estimate the cost of larger plants add $7 10 for 20 feet pipe and connections to the price of lamp desired.

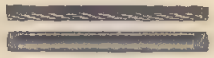
For the EXACT Cost, send us a diagram of room to be lighted, showing location of lamps and measurements that can be given, style of light desired, and we will be pleased to quote you price on the complete plant.



No. 56 1000 Candle Power
Outside Air Light System Fixture.
Price $24 00

THE NULITE SYSTEM OF GASOLINE LIGHTING

Did you ever stop to consider the advantages of a well lighted store? It is the best and cheapest advertisement



GENERATOR TUBE AND COPPER CABLE
Used on 6 and 6A System Lamps.

Tip and gauze of **FOUR-PIECH GENERATOR** used on 6 and 6A System Lamps. Easy to clean.

OUR GUARANTEE

We hereby guarantee to repair or replace any imperfections in material or construction that may develope in our System Lights for one year from date of sale, provided the part or parts claimed to be defective are returned to us for inspection, transportation charges prepaid, before claim will be allowed. We do not guarantee mantles or glassware.

NULITE INDOOR SYSTEM No. 6.

NULITE HOLLOW WIRE SYSTEMS AND VAPOR GAS LAMPS.

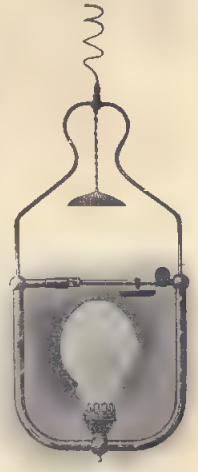
The Nulite Hollow Wire Lighting Systems and Lamps are the oldest and most reliable in use. We have thousands of testimonials from satisfied customers as to their efficiency. Nothing but the very very best material is used in their construction and the workmen employed in our factory are experts in their line, having had years of experience in manufacturing gasoline lights and appliances.

This line includes lamps and systems for absolutely every purpose, Stores, Halls, Churches, Hotels, Dwellings, Streets, Lawns, Parks, etc.

There are about 200,000 Nulite systems in use at the present time in all parts of the world, many of them having been in constant service for ten to twelve years. Such a record should satisfy you that our system is worthy of your interest at least, and we [illegible] an opportunity to show you that these statements are absolutely true.

We guarantee our systems and lamps to be as represented and our knowledge of the material used in their construction justifies us in doing so.

With this system 600 Candle Power is produced from one mantle at thirty hours per gallon or about one half cent per hour.



NULITE INDOOR SYSTEM No. 6A.

We furnish with each complete System all necessary glassware, mantles, wrench, alcohol can, tank pump, twenty-five feet of hollow wire, etc. One to six lamps of 600 candle power each can be operated individually or in series with a five-gallon tank, and one to twelve lamps on a ten-gallon tank. By furnishing us with a diagram showing the manner in which you intend installing the plant giving the height of ceiling distance between lamps, drop of each lamp from main feed tube we will make all connections at factory, numbering each piece to correspond with number on diagram, which we will return to you, thus making the installing of the System very simple.

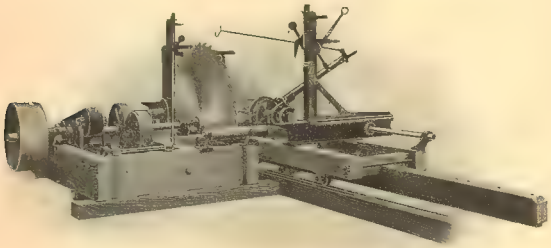
No. 6 or 6A.	Indoor Nulite Lighting System, complete with 5 gallon tank, 25 ft. hollow wire and connections	$38.00
No. 42	Indoor Lighting System, complete with 5 gallon tank, 25 ft. hollow wire and connections	33.35
No. 43	Outdoor Lighting System, complete with 5 gallon tank, 25 ft. hollow wire and connections	37.35
No. 6 or 6A	Indoor Nulite Lighting System Lamp, complete with glassware and mantle	10.00
No. 42	Indoor Lighting System Lamp, complete with glassware and mantle	11.35
No. 43	Outdoor Lighting System Lamp, complete with glassware and mantle	18.00
No. 2 or 4	Inch Hollow Wire, per foot	02
"T"	Connections, each	70
4-Way "T"	Connections, each	1.00
10 Gallon	System Tank, only complete with gauge and pump	26.70
5 Gallon	System Tank, only complete with gauge and pump	22.70

No. 43—OUTDOOR SYSTEM.

STEEL TANK FURNISHED ON SYSTEMS.

INDOOR SYSTEM No. 42.

Circular Saw Mills



Size "S" Circular Mill.

Size Husk.....3 feet by 5 feet 6 inches	Length of Carriages.. ... .16, 20 and 24 feet
Diameter and Length Mandrel....2⅝16 by 55 inches	Width of Carriages .... 27 and 33 inches
Size Drive Pulley.....20 by 10 inches	Size Carriage Timbers. . .. ...3¾ by 5½ inches
Style Saw Guide.....Improved "S"	Trucks..... ..6-in. wheels on 1⅛-in. axles
Feed per Revolution of Saw.....0 to 3 inches	Length Track..... ....40, 48 and 56 feet
Gig Back.....8 in., or 400 ft. per minute	Style and Opening of Block....CI—30 or 36 inches
Feed Belt.. .. .. 4-inch Gandy	Style Mill Dogs ... .Pony Excelsior
Largest Diameter Saw .. ..54 inches	Style Set Works . . . ... Single Ratchet, Size O

This Mill is built only as a single mill, with rack and pinion or cable-driven Carriages. Designed for use in connection with engines of the power usually employed with threshing machines, we especially recommend it to this class of saw mill men as a most desirable outfit.

Both husk and carriage are, as will be noticed from the above specifications, of a size easily moved from setting to setting between the standards of a wagon. The accurately finished steel mandrel, regularly fitted with a 20-inch diameter, 10-inch face drive pulley, which when desired will be furnished in dimensions giving proper speed to the saw, without extra charge, is carried by long, self-oiling, adjustable and carefully-babbitted bearings permitting of changing the lead. The "S" Saw Guide will be appreciated, as it eliminates all danger while adjusting it, being operated from in front of the husk and away from the saw. A 4-inch belt conveys ample power to the feed, ranging from 0 inches to 3 inches to each revolution of the saw, while the powerful gig back furnishes a quick reversing carriage, adding largely to the capacity of the mill.

Long Leaf Yellow Pine Timbers are used in the construction of the Carriage The side rail nearest to the saw serving as a rack stick is of sufficient length to make a 4-foot rack extension at each end of the Carriage

Sufficient "V" Saw Mill and flat track with screws to fasten it to track supports is furnished with each outfit, but trackways will be supplied only on special order, as it is generally preferred to build them at destination to avoid freight charges. The 1¾-inch diameter Set Shaft of equal length to that of the Carriage is supported by a bearing at each end of the Carriage and by the bearings in the Head Block bodies. With each complete Size "S" Mill we furnish one saw wrench, feed belt, pulley with boxes for tightener and foundation bolts for the husk.

Prices furnished on receipt of inquiries.

SPECIALTIES FOR THE AUTO TRADE

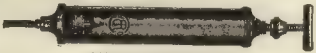
THE MAXIMUS TIMER

(Note self-cleaning feature.) Admittedly the best timer yet brought out.

THE COPPERHEAD PLUG

(Best Dollar Plug.)

A 1911 product just coming through. Imported Porcelain. Extra high grade, finely made, handsomely finished and fully warranted. List, $1.00.



MAXIMUS GREASE GUN

Piston ring construction, with rings ground to perfect fit. A perfect tool. List, $4.00.

BLUE RIBBON EXHAUST HORN

A four-tone chime of the highest grade, solid brass, sixteen inches long and 2¾ inches in diameter. Guaranteed not to shriek on high speed and to be perfect in tone, material and workmanship. Complete, with Butterfly exhaust valve and all-brass foot pedal. List, each, complete, $10.00.

CLOVERLEAF CLOCK

(For autos and motorcycles.)

Neat and attractive; well made, well finished and fully warranted List, each, $3.50.

METERS

Oldest and best known line of ampere and volt meters, wide range of styles and sizes, both pocket and switchboard types.

ELECTRIC LAMPS

High-grade headlights, side-lights and tail lights in electric. High class and at low prices

B-R WRENCH

A complete line of auto and machinists' tools. High-class assortment of auto tool rolls.

Manufacturer for Auto Jobber and Dealer

THE BECKLEY-RALSTON COMPANY

80-82-84 Michigan Avenue **CHICAGO**

MINERS' CAPS

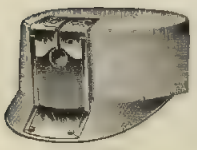


FIG. 4692.

This cap is made of extra heavy 12 ounce duck, double stitched throughout and entirely lined with flannel. The visor is made of heavy material so as not to become affected by water or dampness. They are covered with Heavy Duck or Oil Cloth.

The attachment number 2 used in the construction of this cap is made of XX Tin, interlined with Vulcanized Fibre which will not absorb oil or water. It is attached to the cap so as to insure perfect comfort to the wearer.

Our patent is so constructed as to force the lamp directly in front of the cap, no matter what the position of the wearer.

No. 400—2. Extra Heavy White Duck.
List.....per dozen, $2.20

No. 401—2. Extra Heavy Brown Duck.
List.....per dozen, 2.20

FIG. 4693.

This cap is made of material lighter in weight than 400—2. The attachment number 3 is also made of lighter material and is interlined with Fibreloid, otherwise this style works exactly as number 2 attachment.

No. 400—3. Heavy White Duck.
List.....per dozen, 2.10

No. 400—3. Heavy Brown Duck.
List.....per dozen, 2.10

FIG. 4694.

This Cap is made of Heavy Weight Duck. The Attachment is of Sole Leather, largely used in the Anthracite Coal Fields.

No. 400—6. Heavy White Duck.
List ... .per dozen, 2.30

No. 400—6. Heavy Brown Duck.
List..... .....per dozen, 2.30

LATTIMORE STYLE CAP

FIG 4695.

No. 1200—9. Heavy White Duck.
List.....per dozen, 2.20

No. 1200—9. Heavy Brown Duck,
List.....per dozen, 2.20

MINERS' BELTS

FIG 4696.

Made of Heavy Duck, Triple Stitched, with Leather Billets and Clapes securely riveted.

This Belt is more comfortable than a leather belt.

No. 25. Heavy Canvas White Belts.
List..... per dozen, 1.60

No. 26. Heavy Canvas Brown Belts.
List.....per dozen, 1.60

FIG. 4697.

MINERS' LAMP WICK

Fine searchlight wick, per lb.. .... $0.11
Coarse wick, per lb... . ... .36

Put up in 6 lb. bales—running from 8 to 9 balls to the pound.

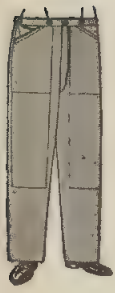


FIG. 4698

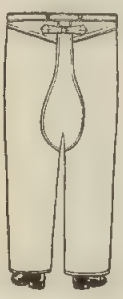


FIG. 4699.

MINERS' OVERALLS

Heaviest and best sewn duck pants.

Plain—8-oz. white duck, per dozen $14.50
Rubber gored—8-oz. white duck, per dozen..... 16.00

MINERS' FILES

8-inch flat mill saw files... .....
10-inch flat mill saw files.....
12-inch flat mill saw files.....
14-inch flat mill saw files.....

FIG. 4700.

FILE CASES

FIG. 4701.

10-inch file cases..... 12-inch file cases..... .....

COAL SLEDGES

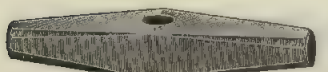


FIG. 4637

Extra Quality, solid forged steel, oil tempered and oil finished, polished face.

"BESTOVALL" BRAND

Weight, each.....lbs.	4	4½	5	6	7	8
Length over all.....inches	8	9	9⅝	10½	11	11¼
List.....per lb.	$0.40	.40	.30	.30	30	.30

FIG 4638.

COAL WEDGES

Solid forged highest grade crucible steel, oil tempered and oil finished.

"BESTOVALL" BRAND

Weight each.....lbs.	1½	2	2½	3
Length, over all.....inches	7⅞	8⅛	8¾	9
List.....per lb.	$0.20	.20	.20	20

STANDARD

Regular pattern, solid forged steel.

Weight each.....lbs.	1½	2	2½	3
Length over all.....inches	8¼	8½	9	10
List.....per lb.	$0.15	.15	.15	.15

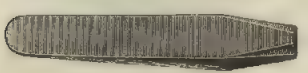


FIG. 4639.

COAL WEDGES

MISSOURI PATTERN

Weight each.....lbs	1¼	1¾	2
Length over all.....inches	8½	9	10
List.....per lb.	$0.20	.20	.20

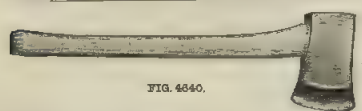


FIG. 4640.

COAL MINERS' AXES

Soft steel body, hardened poll, crucible forged steel and tempered raised bit, body painted red, polished bit.

NO. 1 SELECT 28-IN. OVAL STRAIGHT HICKORY HANDLE

Weight in a box, assorted.....lbs.		3 to 4	3½ to 4¼
Shipping weight per dozen, about.....lbs.		60	86
List.....per doz.		$15.00	15.25

PUNCHER PICKS

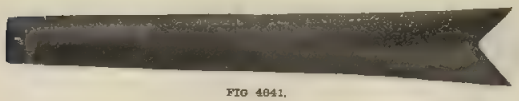


FIG 4641.

List for picks finished and ready for use. Uncut or unfinished, deduct net cash 2½ cts. Both kinds carried in stock

Standard dimensions 18 inches. 1¼ inches octagon steel. Weight approximately 10 pounds.

	List, Each
"Bestovall" made from Black Diamond tool steel, guaranteed, best pick made	$2.50
"Fort Pitt" made from solid crucible steel, extra high grade	2.25
"Monarch" made from regular puncher pick steel, good grade	1.80
"Competition" market grade, made from steel	1.60

MINING MACHINE BITS

FOR ANY MAKE MINING MACHINE

Chisel Point

FIG. 4642.

We especially recommend "Bestovall". They are worth three common or market grade.

Pick Point

FIG. 4643.

Chisel Point sent unless otherwise specified.
Furnished in following brands and grades.

	List per 100
"Bestovall" hand made from solid crucible steel, sharpened	$12.00
"Fort Pitt" machine made from solid crucible steel, sharpened	10.00
"Monarch" machine made from regular bit steel	9.00
"Competition" regular market grade, mining machine bit	8.00

Above packed in kegs of about 500.

BIT STEEL

	List, Per Lb.
"Bestovall" special crucible for high grade picks	$0.20
"Fort Pitt" crucible steel, good grade	.15
"Monarch" regular bit steel	.13¾

ROLLER BEARING ROTARY DUMP CAR

CAST FRAME STEEL ROLLER BEARINGS

STRONGEST, SIMPLEST, EASIEST TO REVOLVE, CLOSEST TO GROUND

48-A

FIG 4819.

This is our new Rotary Dump Car with single piece Cast Frame, cast friction ring, broad and heavy, and steel roller bearings in the spider.

The frame is strong and heavy, to stand the jar of the dump. The friction ring being of large diameter the weight of the car is distributed towards the axle bearings and there is very little strain on the king pins. The spider lugs are of the strongest pattern and the standards are made of heavy steel.

A child can revolve the car, and a child can dump it, for it is exactly balanced. The babbitted section of the boxing is a separate piece from the frame casting, and can therefore be quickly and cheaply renewed. The car is close to the ground approximately 30 inches from top of rail to bed.

A very excellent and very cheap Car can be obtained by buying just that part of the car shown in No. 48-B, with or without the irons and rods for the bed. The lumber is very simple construction and easy to put together, and by buying the irons only you can save on the first cost and also save the freight on the lumber.

No. 48-B, of the truck includes the 4 wheels, 2 axles, cast frame boxings and friction ring, cast spider with roller bearings, spider lugs and king pin. Also draft timber and hook.

PRICE LIST NO. 40 OF ROLLER BEARING ROTARY DUMP CARS

WRITE FOR DISCOUNTS

(For 36 inch gage, other gages quoted on application.)

48-B

FIG. 4820.

Capacity of bed, Cu. ft. 27 ft.=1 yd.	Size of Beds, Feet	Size of Axle, Inches	List Price of Truck as No. 48-B	List Price of all from wood work including truck and bolts	List Price Wood work car complete as No. 48-A
30 cu. ft.	5x6x1	2	$58.00	$64.00	$85.00
45 " "	5x6x1½	2	58 00	68.00	90 00
60 " "	5x6x2	2¼	76.00	90 00	124 00

Note—In the price list the 60 cubic foot car has 14 in. wheels tight on axles and babbitted bearings. The 30 and 45 cubic foot cars have 12 in. self oiling wheels loose on axles. Wheels tight on axles and babbitted bearings for the two smaller cars if preferred and ordered separately, will be furnished at an extra list price of $10 00 for 12 in. wheels and axles or $14.00 list extra for 14 in. wheels and axles.

MINING CARS

WOOD OR STEEL OR COMBINATIONS

Style A

FIG. 4803.

Style C

FIG. 4804.

Style D

FIG 4805.

Style F

FIG. 4806.

Style G

FIG. 4807.

Style H

FIG. 4808.

Style I

FIG 4809.

Style J

FIG. 4810.

Style K

FIG. 4811.

Style L

FIG. 4812.

Style M

FIG. 4813.

Style N

FIG. 4814.

Style O

FIG. 4815.

Style P

FIG. 4816.

Style R

FIG. 4817.

Style S

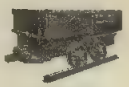


FIG. 4818.

ESSENTIAL SPECIFICATIONS ABOUT A CAR

A FEW NECESSARY SPECIFICATIONS

(a) Track gage.
(b) Capacity in cubic feet level full? (Average coal runs 40 to 50 cubic feet to the ton.)
(c) Height from rail to top of side boards.
(d) Length of car out to out of bumpers.
(e) Couplings, yes or no.
(f) Style of truck.
(g) Diameter of wheels and style.
(h) Lift gate or swinging gate like which car?
(i) Bumpers, side or center?
(j) With or without brake. (Single or double acting.)
(k) Wood work complete or iron work only.

We can design a car if above specifications are furnished.
If particular about the details send for a complete specification blank.

MINING CARS

WOOD OR STEEL OR COMBINATIONS

Style A

FIG. 4803.

Style C

FIG. 4804.

Style D

FIG 4805.

Style F

FIG. 4806.

Style G

FIG. 4807.

Style H

FIG. 4808.

Style I

FIG 4809.

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FIG. 4810.

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Style L

FIG. 4812.

Style M

FIG. 4813.

Style N

FIG. 4814.

Style O

FIG. 4815.

Style P

FIG. 4816.

Style R

FIG. 4817.

Style S

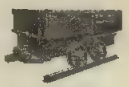

FIG. 4818.

ESSENTIAL SPECIFICATIONS ABOUT A CAR

A FEW NECESSARY SPECIFICATIONS

(a) Track gage.
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(f) Style of truck.
(g) Diameter of wheels and style.
(h) Lift gate or swinging gate like which car?
(i) Bumpers, side or center?
(j) With or without brake. (Single or double acting.)
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We can design a car if above specifications are furnished.
If particular about the details send for a complete specification blank.

ROLLER BEARING ROTARY DUMP CAR

CAST FRAME STEEL ROLLER BEARINGS

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A child can revolve the car, and a child can dump it, for it is exactly balanced. The babbitted section of the boxing is a separate piece from the frame casting, and can therefore be quickly and cheaply renewed. The car is close to the ground approximately 30 inches from top of rail to bed.

A very excellent and very cheap Car can be obtained by buying just that part of the car shown in No. 48-B, with or without the irons and rods for the bed. The lumber is very simple construction and easy to put together, and by buying the irons only you can save on the first cost and also save the freight on the lumber.

No. 48-B, of the truck includes the 4 wheels, 2 axles, cast frame boxings and friction ring, cast spider with roller bearings, spider lugs and king pin. Also draft timber and hook.

PRICE LIST NO. 40 OF ROLLER BEARING ROTARY DUMP CARS

WRITE FOR DISCOUNTS

(For 36 inch gage, other gages quoted on application.)

48-B

FIG. 4820.

Capacity of bed, Cu. ft. 27 ft.=1 yd.	Size of Beds, Feet	Size of Axle, Inches	List Price of Truck as No. 48-B	List Price of all from wood work including truck and bolts	List Price Wood work car complete as No. 48-A
30 cu. ft.	5x6x1	2	$58.00	$64.00	$85.00
45 " "	5x6x1½	2	58 00	68.00	90 00
60 " "	5x6x2	2¼	76.00	90 00	124 00

Note—In the price list the 60 cubic foot car has 14 in. wheels tight on axles and babbitted bearings. The 30 and 45 cubic foot cars have 12 in. self oiling wheels loose on axles. Wheels tight on axles and babbitted bearings for the two smaller cars if preferred and ordered separately, will be furnished at an extra list price of $10 00 for 12 in. wheels and axles or $14.00 list extra for 14 in. wheels and axles.

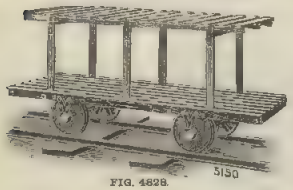


FIG. 4828.

DOUBLE DECK CAR

WITH 2 STEEL DECKS

Gage, Inches	Channel Inches		List Price
24	3/16	Bottom Deck	$83.00
25	1/8	" "	62 00

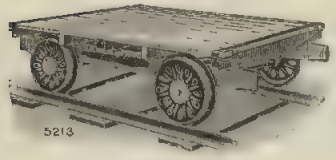


FIG. 4829

PUSH CARS

PUSH CARS 7 FEET X 5 FEET. 7 INCHES WITH PRESSED STEEL WHEELS

Gage, Inches	Channel, Inches		List Price
. .	. . . . .	Bottom Deck	$62 00

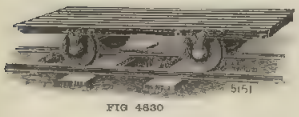


FIG 4830

STIFF MUD FLAT CAR

WITH STEEL NECK, CAPACITY 500 TO 600 BRICKS

Gage, Inches	Channel Deck Inches	List Price
24	3/16	$22.00
24	1/8	21 00

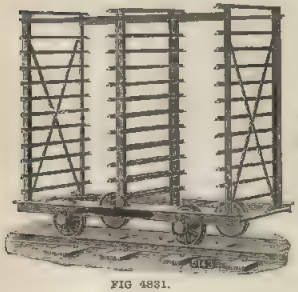


FIG 4831.

DRYER CARS

Gage Inches	Pallet Side Dimensions, Inches	List Price
24	1¾ x 1¼ x 1/8	$33.00
24	1 x 1 x 1/8	32 00

INDUSTRIAL CAR

FOR USE IN CARRYING HOT INGOTS AND BILLETS

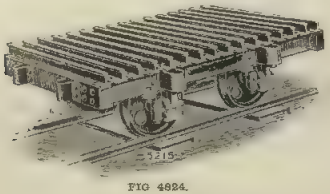


FIG 4824.

PRICES ON APPLICATION

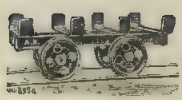


FIG 4825.

BILLET CAR

DESIGNED FOR RAPIDITY AND DURABILITY

PRICES ON APPLICATION

PLATFORM CARS

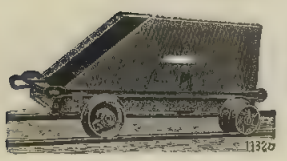
For industrial plants and contractor works, mounted on heavy channel steel with cast steel wheels and roller bearings as per following specifications:

FIG. 4826.

Gage	Capacity	Roller Bearings	List Price
24 in.	2 tons	5 ft. x 37 inches	$72.00
24 in.	2–3 tons	5 ft. x 37 "	80.00

MINE SKIPS

ALL SIZES AND CAPACITIES

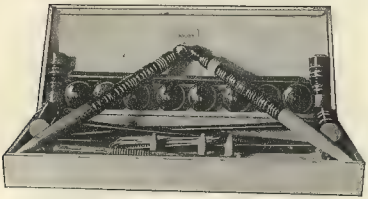


Gage	Capacity		List Price
	Cu. ft.	lbs.	
24 in.	15	928	$168.00
36 in.	25	1375	250.00
42 in.	30	1714	300.00

FIG. 4827.

Other gages and capacities upon request.

CROQUET



Each Set contains a Book of Instructions and Rules
All Boxes are Flat, with Hinged Cover and Dovetailed
Packed Three Sets in a Crate

NO. 6X, FOUR BALL SET

Rock Maple Balls and Stakes, Varnished. Beaded Mallets with Maple Handles. Ten Polished Iron Arches.

No. **6X** ..... Per set $1.10

NO. 8, EIGHT BALL SET

Rock Maple Balls and Stakes, Varnished. Beaded Mallets with Maple Handles. Ten Polished Iron Arches.

No. **8** ..... Per set $1.50

NO. XA, EIGHT BALL SET

All Parts Varnished. Mallets Painted. Two Eight Colored Stakes. Ten Polished Arches.

No. **XA** ..... Per set $2.00

NO. 4, FULL EIGHT BALL SET

Full Varnished Selected Polished Balls. White Maple Handles. With Three Painted Stripes on Balls, and Wide Painted Striped Handles. Nicely Beaded Turned 5½ inch Long Mallets. Galvanized Arches.

No. **4** ..... Per set $2.30

NO. 5, FOUR BALL SET, PROFESSIONAL

Full Varnished and Striped Balls, Handles and Stakes. 8 inch Long Mallets with Short Handles, Painted and Striped. Galvanized Arches.

No. **5** ..... Per set $2.50

NO. 3, EIGHT BALL SET

Highly Polished Balls. 5½ inch Long Mallets, with White Maple Handles. Three Stripes on Balls and Handles. Three Stripes on Mallets. Two Fancy Eight Colored Stakes. Galvanized Arches.

No. **3** ..... Per set $3.00

NO. 5X, EIGHT BALL SET, PROFESSIONAL

Full Varnished and Striped Balls, Handles and Stakes. 8 inch Long Mallets with Short Handles, Painted and Striped. Galvanized Arches.

No. **5X** ..... Per set $3.70

THE RICHEST GENUINE AMERICAN CUT GLASS

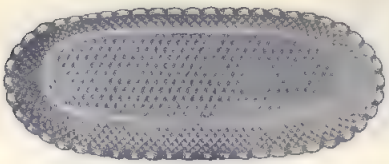
ILLUSTRATIONS ARE REDUCED SIZE.

NOTE—It is a physical impossibility to reproduce this product by wood cutting or photography. These photos illustrated do not do justice to the goods itself.

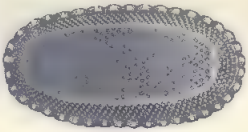
THE RICHEST, MOST ELABORATE AND EXQUISITE CUT GLASS EVER MANUFACTURED.

The lustre suggests the blue-white radiance of diamonds accomplished by the master hands and extreme care exercised at our factory.

IT IS TRUE ART—CRYSTALLIZED.

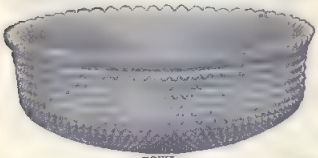


CELERY TRAY.
Length, 11½ in...
No. 5146 Each ... $20.00

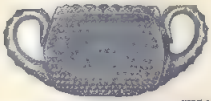


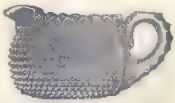
SPOON TRAY.
Length, 8 inches
No. 5147 Each $9.00

TUMBLERS.
Height, 4 inches
Per doz
No. 5148 .... $66.75

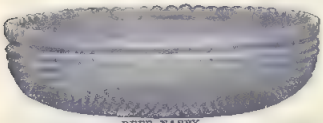


BOWL
No. 5149 10-inch, each ...



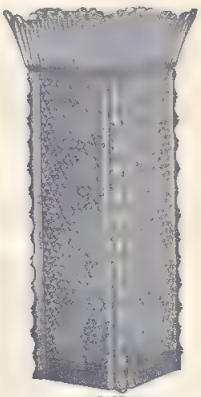


SUGAR AND CREAM SET.
...Illustrated ... $32.25



DEEP NAPPY
No. 5151 8 inch diameter, each ...
No. 5152 10 inch diameter, each ...

COMPORT.
Height ... Diameter 7 inches
... $22.25



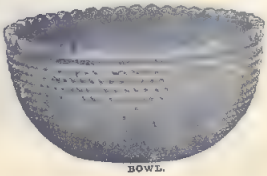
VASE

		Each
No. 5154	Height, 10 inches	$23.75
No. 5155	Height, 12 inches	...
No. 5156	Height, 14 inches	...

ALL ORDERS FILLED SAME DAY RECEIVED

PITCHER.
Capacity, 4 pints; height, 11 inches.
No. 5157 Each ... $33.50

PITCHER.
Capacity, 4 pints; height, 8¼ inches.
No. 5158 Each ... $29.00



BOWL.
No. 5159 8 inches. Each ... $26.75

THERE ISN'T A DOUBT

AS TO THE PRACTICABILITY AND ECONOMY OF

ELECTRIC WELDING

We are welding **automobile parts** for a **large number** of the **manufacturers. Parts,** too, that are **subjected** to the **greatest stress** and upon which **absolute dependence** must be placed. Axles, Gear Casings, Radius and Brake Rods, Pedal Levers, Steering Knuckles, Spring Hangers, Connecting Rods and Propeller Shafts are some of the articles being furnished. Our line of work eliminates the necessity of maintaining expensive forging dies.

MOTORCYCLE AND BICYCLE PARTS

THE STANDARD WELDING CO.

CHICAGO **CLEVELAND** **NEW YORK**

THE DANGER SIGNAL

HAM'S MARS

There is immense satisfaction in having a lamp on your car

THAT STAYS LIT

Of course lamps do blow and jar out, but they are not

"Ham" Lamps

The superior construction, close attention to detail, peerless workmanship and finish, coupled with elegance of design, places our products far in advance of competitors.

When you want a Tail Lamp—the best that's made, order **HAM'S MARS** and you will bless the day we introduced it to your notice.

C. T. HAM MFG. COMPANY, ROCHESTER, NEW YORK

FIG. 4702.

MINERS' POWDER CANS

WITH SIDE HANDLE

Capacity ..... lbs.	5	10
List ..... per gross	$24.20	38.56

WITH BAIL

Capacity ..... lbs.	5	10
List ..... per gross	$30.84	42.40

FIG 4703.

COFFEE FLASKS

WITH 1 1-4 INCH SCREW

Capacity ..... pints	1½	2
Size ..... inches	2⅝ x 4⅝ x 4¼	2⅝ x 4⅝ x 5¼
List ..... per gross	$22.06	23.30

FIG 4704.

TIN DIPPERS

Capacity ..... pints,	½	1	2	4
List per gross, plain tin	$7.00	8.74	11.26	12.58
" " " retinned	11.50	14.00	16.92	19.26

No. 1

FIG. 4705.

MINERS' DINNER PAILS

No. 1—One compartment. Heavy ears. Extra long bail. Black enamel, bail wood.

Cap. ..Qts.	3	4	5	6
List, per gr.	$51.66	59.50	67.54	75.28

No. 2—One compartment. Hinged cover with clasp. Extra long bail. Black enamel, bail wood.

Cap. .....Qts.	4	5	6
List.. .per gross	$44.50	48.88	53.34

No. 2

FIG. 4706.

MINERS' BELT OIL CANS

Diamond

FIG. 4707.

The loop on this can works on a pivot and enables the miner to fill lamp without removing the can from the belt.

Common

FIG 4708.

Tin, one pint, list..... ...per gross, $24.00
Galvanized Iron, one pint, list..... " " 30.00
Copper, one pint " " " " 54.50

COMMON MINERS' BELT OIL CANS

Tin, one pint, list..... ..per gross $15.00
Galvanized, one pint, list..... " " 20.00
Copper, " " " " " " 44.00

MINERS' BELT OIL CANS

FIG. 4709.

Capacity	½ pint	1 pint, loop	1 pint, hook	1 quart	2 quarts
Diameter	in. 4½	4⅞	4⅞	6½	7½
List	per gross $19.00	21.74	21.74	24.62	32.40

MINERS' STEEL CADGER

A strong and durable carrier for miners' reserve oil supply. Made of heavy cold rolled steel, with double rolled side seam speltered inside. Heavy tapered spout, spelter brazed to body of can, with tapered cap of same gage, making tight joint without screw thread.

Easily removed.

Practically indestructible.

Will outlast half a dozen ordinary tin Cadgers, and costs but little more than one.

Fits the pocket.

Always with you.

½ pint, list..... .....per gross, $36.00

FIG. 4710.

MINERS' OIL CANS

ROUND TOP

¼ gallon. .....per dozen, $2.50
1 " ..... " " 3.00

FIG. 4711

LANTERNS AND LAMPS

BUCKEYE DASH LAMP

Fig. 8849A

VICTOR TUBULAR
No. 0

Fig. 8849B

COLD BLAST TUBULAR
No. 2

Fig. 8849C

Description	Buckeye Dash	No. 0 Victor Tubular	No. 1	No. 2 Cold Blast Tubular
Price with White Globe per dozen	18 50	29 50	[illegible]	12 00
" " Ruby Globe " "			11 50	11 50

BEACON LIGHT
Nos. 30 AND 60

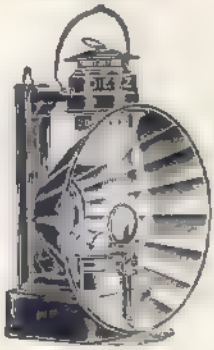


Fig. 8849D

RAILROAD LANTERN
No. 39

Fig. 8849E

BULLSEYE OR
DARK LANTERN

Fig. 8849F

Price, No. 30 Beacon Light Lamps	per dozen	30.00
" " 60 " " " "	"	60.00
" " 39 Railroad Lanterns with White Globe	"	11 00
" Bullseye or Dark Lanterns	"	9 00

LANTERNS AND WICKS

No. 2 BLIZZARD TUBULAR

Fig. 443A

JUNIOR BLIZZARD

Fig. 443B

BEACON DASH

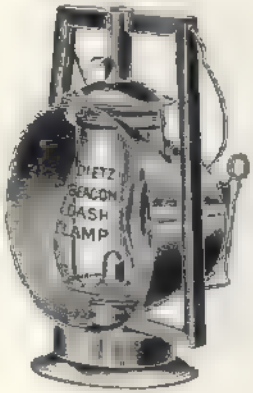


Fig 443C

Price No 2 Blizzard, Bright Tin Copper Potent		per dozen	21 00
" " 2 " Special, Bright Tin, Extra Large Fount		"	8 00
" Junior Buzzard, Nickel Plate on Brass		"	24.00
" Beacon Dash Lamps, Bright Tin		"	31 50

FLAT LAMP OR LANTERN WICKS

Numbers		0	1	2	3
Width	inches	$\frac{5}{16}$	$\frac{7}{8}$	1	1¼
Price	per gross	.60	.75	1.10	1 75

FLAT STOVE WICKS

Width	inches	3	4
Price	per gross	1 25	1 75

ROUND OIL HEATER WICKS

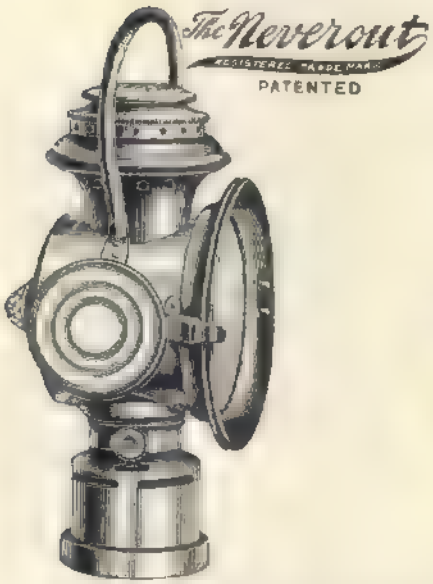
Number		½	⅞	1
Circumference	inches	6	$8\frac{1}{2}$	10
Price	per gross	15 00	18 00	18 50

PEERLESS FLAT LAMP OR LANTERN WICKS

Number		1 or A	2 or B
Number of Rolls in Carton		24	24
Length of Roll	yards	2	$1\frac{1}{2}$
Price	per carton	1.50	1 50

LAMPS

"NEVEROUT" CARRIAGE LAMPS



NO. 53 CARRIAGE LAMP

Red Side and Rear Signals

Extreme height, including Handle, 9¾ inches; length, 4½ inches; width, 4⅛ inches; diameter of Face, 4⅝ inches; weight, 20 ounces. Will fit any Standard Finger Iron.

NO. 46 SPECIAL JAPANNED DASH BRACKET

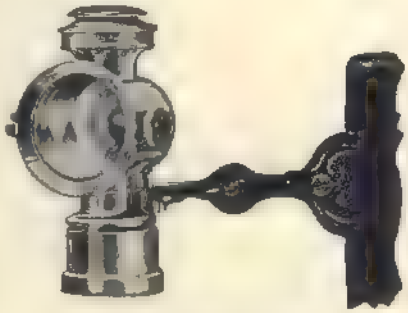
Made with Universal Clamp, allowing of Quick and Firm Adjustment.

NO. 53 CARRIAGE LAMP

No. 53 Brass Carriage Lamps, Polished, without Brackets..Each $3.00

Left Hand will always be supplied, unless otherwise specified.
One in a Box.

No. 46 Brackets, for above, Japanned . . . . Per dozen $3.00



NO. 55 DASH LAMP

Red Side and Rear Signals

Height, 6⅜ inches; weight, 12⅛ ounces. Fitted with Powerful Lens and Patent German Silver Glass-Covered Reflector. Patent Elbow Bracket admits of any Adjustment.

No. 55 Polished Brass, with Brackets .. $3.00
" **55 Nickel Plated,** with Brackets .. 3.00
" **55 Gun Metal,** with Brackets 3.00

One in a Box.

STREET LAMP

DIETZ "PIONEER"

DIETZ "PIONEER" STREET LAMPS

(Cold Blast

Painted Green. Fount holds oil to burn 24 hours. Self-Extinguishing Device. Can be set to burn for a fixed number of hours and then automatically extinguishes itself. No. 3 "Pioneer" Burner. 1⅜ inch Wick. "Pioneer" Globe.

"Pioneer" Street Lamps .. .. Each $5.00

One in a Case.

DIETZ "PIONEER" HANGING LAMPS

(Cold Blast.

Painted Green. It is not affected by the strongest winds. Fount holds oil to burn 24 hours. Self-Extinguishing Device. Can be set to burn for a fixed number of hours and then automatically extinguishes itself. No. 3 "Pioneer" Burner. 1⅜ inch Wick. "Pioneer" Globe

"Pioneer" Hanging Lamps .. .. .. Each $5.00

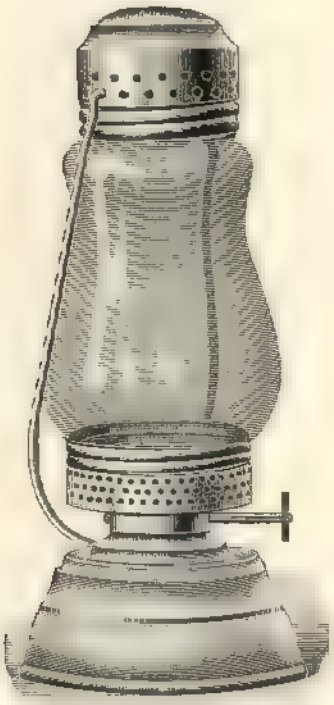
One in a Case.

HANGING LAMP

DIETZ "PIONEER"

LANTERNS, LAMPS, CHIMNEYS AND BURNERS

BRASS LANTERNS



"KLONDYKE"
No. 7001 "Klondyke" Brass Lantern
11 inches high, including Bail.

Per dozen $3.50

Half dozen in a Box.

LAMP CHIMNEYS

Sun Crimp, No. 1 .....Per dozen $1.00
" " **2** ..... " " 1.20

In Open End Climax Cartons.

Lime Crescent, No. 1 .....Per dozen $1.30
" " " **2** ..... " " 1.50

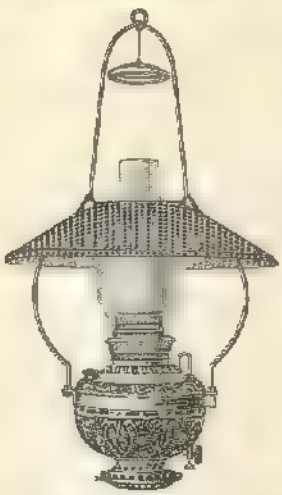
In Printed Cartons.
Six dozen in a Case.

POLICE LANTERNS

Bulls Eye Lens.

No.	**1**	**2**
Lens, inches	2¼	3
Japanned Brown Per dozen	$9.50	10.50

STORE LAMPS

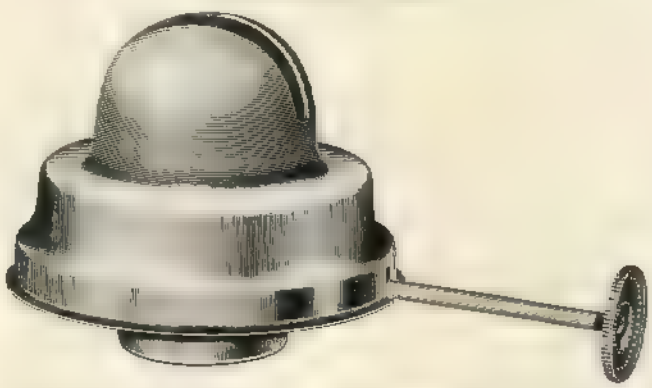


Complete with Harps, Founts Shades and Chimneys.

Mammoth Brass .....Each $6 50
" **Nickel Plated** ..... " 7.00

One in a Box.

LANTERN BURNERS

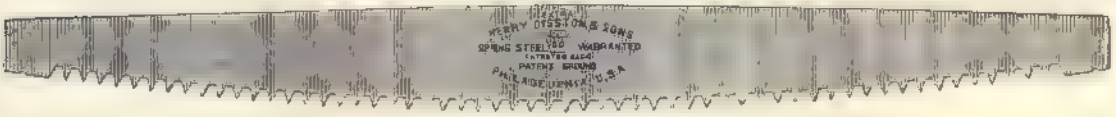


Brass Lantern Burners

No. 1 .....Per dozen $1.00
" **2** ..... " " 2.00

One dozen in a Box.

CROSS-CUT SAWS



PLAIN OR PEG TOOTH

No. 1 Four gauges thinner on Back than on Tooth-edge.
" 2 Two " " " " " " " "

Length, feet		4	4½	5	5½	6	6½	7	7½	8
No. 1	Each	$2.52	2.84	3 15	3 46	3.78	4.10	4.41	4.72	5.04
" 2	"	2.32	2.61	2 90	3 19	3 48	3.77	4.06	4.35	4.64

CHAMPION TOOTH

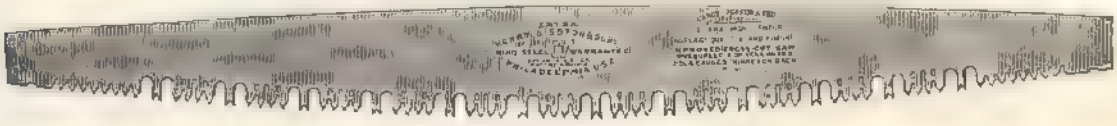
No. 1 Four gauges thinner on Back than on Tooth-edge.
" 2 Two " " " " " " " "

Length, feet		4	4½	5	5½	6	6½	7	7½	8
No. 1	Each	$2.40	2.70	3 00	3.30	3 60	3.90	4 20	4.50	4.80
" 2	"	2.16	2.43	2.70	2.97	3.24	3 51	3.78	4.05	4.32

GREAT AMERICAN TOOTH

No. 1 Five gauges thinner on Back than on Tooth-edge.
" 2 Two " " " " " " " "

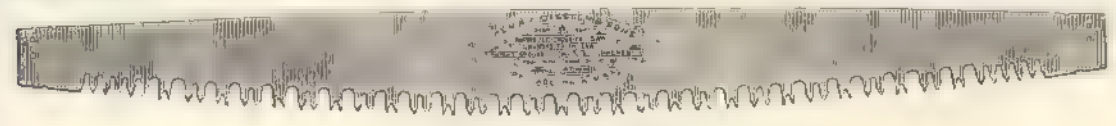
Length, feet		4	4½	5	5½	6	6½	7	7½	8
No. 1	Each	$2.72	3 06	3.40	3.74	4.08	4 42	4.76	5 10	5.44
" 2	"	2 48	2.79	3.10	3 41	3.72	4.03	4 34	4 65	4.96



LANCE TOOTH, PERFORATED

Four gauges thinner on Back than on Tooth-edge.

Length, feet	4	4½	5	5½	6	6½	7	7½	8
Each	$2.72	3.06	3.40	3.74	4.08	4.42	4.76	5.10	5.44



DIAMOND TOOTH

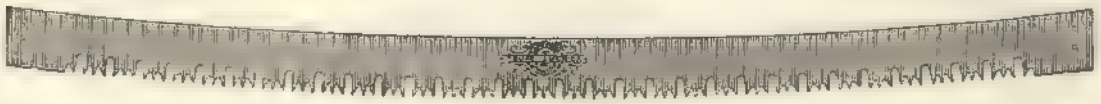
No. 1 Four gauges thinner on Back than on Tooth-edge.
" 2 Two " " " " " " " "

Length, feet		4	4½	5	5½	6	6½	7	7½	8
No. 1	Each	$2.72	3.06	3.40	3.74	4.08	4.42	4.76	5.10	5.44
" 2	"	2.48	2.79	3.10	3.41	3.72	4.03	4.34	4.65	4.96

NARROW CROSS-CUT SAWS

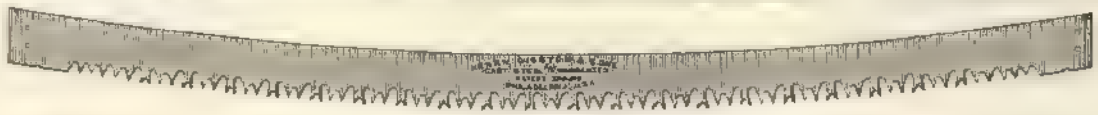
YOUNG AMERICA, CHAMPION TOOTH

Length, feet	4	4½	5	5½	6	6½
Each	$1.36	1.53	1.70	1.87	2.04	2.21



YOUNG AMERICA, GREAT AMERICAN TOOTH

Length, feet	5	5½	6
Each	$2.00	2.20	2.40



TRIUMPH, CHAMPION TOOTH

Length, feet	4	4½	5	5½	6	6½	7
Each	$1.44	1.62	1.80	1.98	2.16	2.34	2.52

Triumph, Plain Tooth, same list prices as Triumph, Champion Tooth.

TRIUMPH, GREAT AMERICAN TOOTH

Length, feet	4	4½	5	5½	6	6½	7
Each	$1 68	1.89	2.10	2.31	2.52	2.73	2 94

Triumph, Diamond Tooth, same price as Triumph, Great American Tooth.

CROSS-CUT SAW HANDLES

NO. 102

No. **102** Climax Reversible, 13⅜ in. long, 1 inch diameter at thickest part. Grey Iron Casting in Front and Back. Malleable Iron Bolt and Nut.

No. **102** Per pair .17½

No. **107** Loop Handle, 10½ inches long, 1⅜ inches diameter. Malleable Iron Round Edge Washer, Loop Rod and Inside Nut.

No **107** Per pair .18

NO. 107

NO. 118

No. **51** Self-adjusting, Case Hardened Bottom. With Norway Iron Loops. These Handles adjust themselves automatically on Cross-Cut Saws.

No. **51** ... Per pair .25

No. **118** Supplementary Handle, 5¾ inches long, 1⅝ inches diameter, Malleable Iron Ferrule, Washer, Rod and Nut fastened inside.

No. **118** ..... Per dozen $1.75

CROSS-CUT TABS

PLAIN

Per pair ..... .10

NO. 218 ONE-MAN

Per dozen $3 10

DUDGEON'S HYDRAULIC JACK

WITH INDEPENDENT DOUBLE PUMP

This type is intended to meet the demand for a simple, efficient and reliable jack with an independent pump, connected with the cylinder by means of a flexible copper pipe. The pipe is 12 feet long, unless otherwise ordered, and is included in the price of the jack.

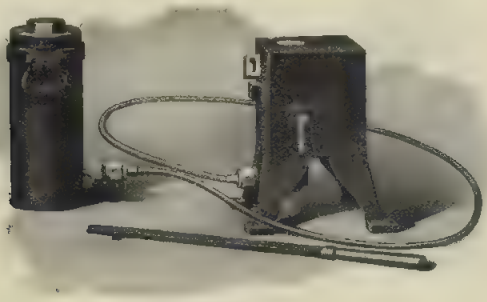


FIG 6480

Lift, Tons	Diameter of Ram, Inches	Diameter of Cylinder, Inches	Height of Jack with Ram Down, Inches				Price			
			4-inch Runout	6-inch Runout	8-inch Runout	12-inch Runout	4-inch Runout	6-inch Runout	8-inch Runout	12-inch Runout
40	4	6⅜	9½	12	14¾	19¾	$280	$285	$290	$300
50	4½	6⅞	9½	12	14⅝	19¾	800	305	310	320
60	5	7⅜	9½	12	14⅝	19¾	320	325	330	340
70	5½	8⅜	9½	12	14⅝	19¾	340	345	350	360
85	6	9⅛	9½	12	14⅝	19⅝	360	265	370	80
100	6½	9⅞	9½	12	14⅝	19¾	380	385	390	400
115	7	10⅝	10	12½	15	20	400	405	410	120
130	7½	11⅜	10½	12¾	15½	20⅛	120	425	430	440
150	8	12⅛	10½	12¾	15½	20⅛	430	435	140	450
170	8½	12⅞	10½	12¾	15½	20⅛	440	445	450	460
190	9	13⅝	10½	12¾	15½	20⅛	450	460	475	500
235	10	15⅛	10½	12¾	15½	20⅛	480	495	510	550
285	11	16⅜	11	13½	16	21	510	530	550	600
340	12	18⅜	11	13½	16	21	540	570	600	650
400	13	19⅞	11	13½	16	21	590	620	650	700
460	14	21⅛	11	13½	16	21	640	670	700	750
530	15	22⅝	11	13½	16	21	680	715	750	800

Gages showing pressure per square inch in pounds, and total pressure on the ram in tons, and provided with a safety check valve, will be furnished, attached, for $25.00, net, extra.

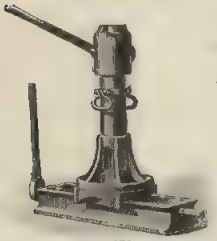


FIG. 5470.

HYDRAULIC TRAVERSE JACK

Tons	Run Out, Inches	Height, Inches	Weight, Lbs.	Price
10	12	30	250	$150.00
15	12	30	275	185.00
20	12	31	310	225.00
30	12	32	425	285.00

FIG. 5471.

CAR BRASS JACKS

Tons	Run Out	Height	Size of Bottom	Weight	Price
7	5	11	8¼x5¼	56	$75.00
10	5	11	9½x6⅛	60	90.00
15	5	11	9½x6¾	80	120.00
20	5	11⅝	10¼x8	108	135.00

This jack is used by Car Inspectors for removing Brasses; also by those requiring a Jack of limited height.

STONE JACKS

WOOD FRAME

Wood Frame

FIG. 5472.

Tonnage	2	3	4	5	6	8	10
Height...in.	34	34½	35	36	36½	37	37½
Weight, lbs.	95	110	120	145	150	185	200
Price, each	$45 00	50.00	55 00	62.00	70.00	$1.50	110 00

Tonnage	12	15	18	20	25	30
H't...in.	38	39	39	39	39	39
Wt lbs.	230	275	300	315	350	400
Price, ea.	$120.00	140.00	150 00	162 50	175.00	200 00

IRON FRAME

Tonnage	2	3	4	5	6
Height.....inches	32	32½	34	34	35
Weight.....lbs.	75	85	100	115	135
Price.....each	$45.00	50 00	55.00	62 00	70 00

Tonnage	8	10	12	15
Height...inches	36	36	37	39
Weight...lbs.	160	170	200	225
Price...each	$84 50	110 00	120.00	140 00

Iron Frame

FIG 5473.

The greatest labor-saving device and only universal Jack on the market for all lifting, shoving and moving purposes.

SQUARE BASE HORIZONTAL JACK

WITH OR WITHOUT REMOVABLE WROUGHT IRON CLAW

This style Jack is used where there is a firm foundation, and is especially adapted for use horizontally, as there is no projecting round base to interfere with placing the Jack on its side.

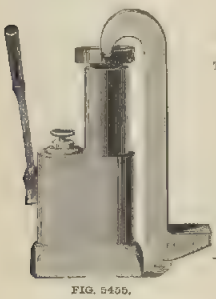


FIG. 5455.

Tons	Run Out	Height	Size of Square Base	Weight	Price	Price, with Claw used with Square Base Only
7	12	20	9 x 5 1/2	102	$80	$85
7	18	26	9 x 5 1/2	120	85	90
10	12	20	9 1/2 x 7	135	95	105
10	18	26	9 1/2 x 7	166	110	125
10	24	32	9 1/2 x 7	196	130	150
15	12	21	9 1/2 x 7	150	125	150
15	18	26	9 1/2 x 7	187	150	180
15	24	32	9 1/2 x 7	200	175	215
20	12	21	11 x 8 1/2	197	150	185
20	18	27	11 x 8 1/2	242	175	215
20	24	33	11 x 8 1/2	265	200	250

ROUND BASE HORIZONTAL JACK

This style Jack is used for railroad work, and where a firm foundation is difficult to obtain; also where a long lift with a low height over all is required.

FIG. 5456.

Tons	Run Out	Height	Size of Round Base	Weight	Price
7	12	20	11	102	$80
7	18	26	11	120	85
10	12	20	12	135	95
10	18	26	12	166	110
10	24	32	12	196	130
15	12	21	12	150	125
15	18	26	12	187	150
15	24	32	12	200	175
20	12	21	13 1/2	197	150
20	18	27	13 1/2	242	175
20	24	33	13 1/2	256	200

DUDGEON'S UNIVERSAL HYDRAULIC JACK

The only jack with a double pump. It represents the highest type of efficiency.

FIG. 5452.

PLAIN JACK

Plain jack for use in presses or where there is a firm foundation or support.

Lift, Tons	Run Out, Inches	Height, Inches	Size of Round Bottom, Inches	Weight, Pounds	Price
30	9	22	8	146	$150.00
30	12	26	8	194	175.00
30	18	33	8	260	210.00
40	12	27	9	280	210.00
40	18	34	9	320	250 00
50	12	27	9	290	250.00

FIG 5453.

RAILROAD JACK

Railroad jack for work where stability and portability are required.

Lift, Tons	Run Out, Inches	Height, Inches	Diameter of Base, Inches	Weight, Pounds	Price
30	9	21	12	160	$160.00
30	12	25	12	206	185 00
30	18	33	13	255	220 00
40	12	27	14	270	220 00
40	18	32.	14	310	260 00
50	12	27	15	315	250 00
50	18	33	15	350	300 00
60	12	27	16	320	300.00

FIG 5454.

BASE JACK

Base jack for railroad work or where a broad base insuring stability is required.

Lift, Tons	Run Out, Inches	Height, Inches	Diameter of Base, Inches	Weight, Pounds	Price
30	9	22	14	210	$170.00
30	12	26	14	260	200.00
30	18	33	14	300	235 00
40	12	27	14 3/8	320	240.00
40	18	33	14 3/8	360	280.00
50	12	28	15 1/8	365	260.00
50	18	34	15 1/8	410	310.00
60	12	28	16	375	310.00

DUFF-BETHLEHEM
FORGED STEEL HYDRAULIC JACKS

FIG. 6431A.

Strength: On account of our forged steel construction all sizes of jacks are capable of withstanding an enormous overload and contain a greater factor of safety than any other jack.

Weight: All sizes are from 30% to 60% *lighter* than any other jacks of equal lifting capacity.

Piston: Height when down is *less* than in any other design. The ram will run out full lift in either *vertical, inclined or horizontal* position.

Tripping: Both valves are opened *positively* by slight pressure on the lever when the same is reversed, causing the load to be lowered. This may be regulated as slowly as required, or stopped at any point, by varying the pressure.

Pump: Our telescope or low type is the only jack having a pumping stroke on both the *upward and downward* motion of the lever, *automatically* reducing the speed with a heavy load, and increasing with a light load, to meet the varying conditions.

Accessibility: The *valves* can be attended to without removing the packing, and the *packing* without removing the *valves*.

Material: Open hearth fluid compressed forged steel, cast steel and bronze, are used throughout to secure lightness and strength.

Construction: Both cylinder and ram have *solid bottom*, thus packing is required *only for ram and pump piston*. Axis of pump stroke *coincides with thrust of pump weight*, insuring uniform wearing of pump packing. Flexible cup packing is used for both pump and ram. The *automatic valveless air vent* allows free flow of air into and from reservoir of jack, and *effectually prevents* flow of filling liquid from reservoir when the jack is placed in horizontal position.

The two most troublesome packings and joints in *all other* hydraulic jacks are *entirely eliminated* in the Duff-Bethlehem jacks.

DUFF-BETHLEHEM
FORGED STEEL PLAIN HYDRAULIC JACKS

Symbol or Number	Capacity in Tons	Run Out, in Inches	Height, in Inches	List Price
A	15	12	23	$82 00
AA	15	18	29	93 00
B	30	8	19¼	98 00
BB	30	12	23⅞	100 00
BBB	30	18	29⅛	118 00
C	50	6	19⅝	120 00
CC	30	12	24	140 00
CCC	30	18	30	160 00
D	40	8	20	130 00
DD	40	12	24½	155 00
DDD	40	18	30⅝	180 00
E	50	12	25⅝	180 00
EE	50	18	31⅝	210 00
G	60	12	27	210 00
GG	60	18	33	240.00

DUFF-BETHLEHEM
FORGED STEEL "INDEPENDENT CLAW" HYDRAULIC JACKS

Symbol	Capacity, Tons	Run Out, Inches	List Price
AX	15	12	$94 00
AAX	15	18	108 00
BX	20	12	125 00
BBX	20	18	148 00
CX	30	12	165 00
CCX	30	18	200 00

FIG. 5401B.

DUFF-BETHLEHEM
FORGED STEEL "LOW" JOURNAL BOX HYDRAULIC JACKS

Symbol	Capacity, Tons	Run Out, Inches	Height, Closed, Inches	List Price
AJ	10	5	10	$75 00
BJ	15	5	10	95 00
CJ	20	5	10	115.00

DUFF-BETHLEHEM
"BROAD BASE" HYDRAULIC JACKS
(FORGED STEEL)

Symbol	Capacity, in Tons	Run Out, in Inches	Height, Inches	List Price
H	15	12	23	$100 00
HH	15	18	23	120.00
I	20	8	19⅝	110 00
II	20	12	23⅛	120 00
IH	20	18	29⅛	140 00
J	30	8	19⅝	135 00
K	30	12	24	150 00
KK	30	18	30	185 00
KKK	40	8	20	190 00
L	40	12	24½	180 00
LL	40	18	30½	220 00
LLL	50	12	30½	210 00
M	50	18	31½	260 00
MM	60	12	27	300 00
P	60	18	33	350 00
PP				

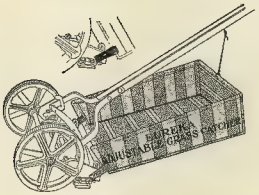
DUFF-BETHLEHEM
FORGED STEEL TELESCOPE OR "LOW" HYDRAULIC JACKS
WITH DUPLEX PUMP
FITTED TO USE INDEPENDENT CLAW

Symbol	Capacity, Tons	Run Out, Inches	Height, Closed, Inches	Weight, Pounds	List Price
DO	60	9	16	268	$225 00
DOO	60	12	17½	313	245 00
DP	80	9	17½	278	295 00
DPP	80	12	18⅝	318	325 00
DS	100	9	17⅞	334	350 00
DSS	100	12	18⅝	370	420 00
DT	150	9	18½	440	410 00
DTT	150	12	20	490	425 00
DV	200	9	19	510	450 00
DVV	200	12	20⅛	535	500 00
DY	250	9	19⅝	610	600 00
DYY	250	12	21	680	650 00

NOTE—Independent claws made for all of the above sizes and supplied extra. Price for extra claws for any of these jacks on application.

GRASS CATCHERS

GALVANIZED STEEL FRAME. BRIGHT STRIPED CANVAS

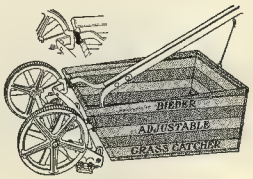


EUREKA

Adjustable to all makes of Low Wheel Mowers.

For Mowers 12 to 18 inches, inclusive.

Eureka No. 1..... Per dozen $8.00



BIEDER. EXTRA DEEP

Adjustable to all sizes and makes of Mowers.

Bieder No. 7 For Low Wheel Mowers, 18 inch and smaller.....Per dozen $11.00

" " **13** For High Wheel Mowers, 24 inch and smaller.....Per dozen 15.50

DUNHAM

HAND LAWN ROLLERS

SERIES "LR"

SERIES "LR"

Rollers Smooth on the Face. Aluminum Finish. The Outer Edges are Rounded to avoid cutting the Lawn or Garden. Roller Bearings and Outside Counter-balancing Weights.

LENGTH AND WEIGHT

No.	Diam., in.	Length, in.	Sections	Face, in.	Weight, lbs.	Cubic Feet	Each.
LR401	15	16	2	8	150	2.17	$9.50
LR402	15	24	3	8	200	3.21	12.50
LR403	20	16	2	8	225	3.83	14.00
LR404	20	20	2	10	250	4.78	15.50
LR405	20	20	1	20	250	4.78	15.50
LR406	20	24	3	8	300	5.71	18.50
LR407	20	24	2	12	300	5.71	18.50
LR408	20	30	3	10	350	7.17	21.50
LR409	24	20	2	10	400	6.88	24.50
LR410	24	24	2	12	450	8.22	27.50
LR411	24	24	3	8	450	8.22	27.50
LR412	24	30	3	10	500	10.33	30.50
LR413	28	24	2	12	500	12.27	30.50
LR414	28	24	3	8	500	12.27	30.50
LR415	28	30	3	10	600	13.52	36.50
LR416	28	32	4	8	650	16.31	39.50

DUNHAM

SINGLE HORSE LAND ROLLERS WITH WEIGHT BOXES

SERIES "MR"

Equipped with Two Weight Boxes, one in front of the Rolls and the other on top, so constructed that the Roller can be made to balance evenly in any position, relieving the horse from all weight. These Boxes are All Steel—not Wood and Cast Iron. There is no stronger, more durable Machine made, yet it is of lighter draft than any other.

LENGTH AND WEIGHT

No.	Diam., inches.	Length, inches.	Sections.	Face, inches.	Weight, pounds.	Cubic Feet.	Each.
MR460	20	48	4	12	950	19	$61.00
MR461	20	60	5	12	1150	23	71.00
MR462	24	48	4	12	1200	24	76.00
MR463	24	60	5	12	1450	29	89.00
MR464	24	72	6	12	1700	34	102.00
MR465	28	48	4	12	1350	29	85.00
MR466	28	60	5	12	1650	34	101.00
MR467	28	72	6	12	1950	39	117.00
MR468	32	48	4	12	2200	30	136.00
MR469	32	60	5	12	2600	36	158.00
Scraper, extra							6.00

Seat is furnished without extra charge. The above Rollers can be made to weigh as much more as required, at 5 cents per pound for additional weight.

LINE SECTION SWITCH
FOR CIRCUITS UP TO 600 VOLTS

FIG. 4460.

The improved form of Line Section Switch which is shown in the above cut is of the Quick Break type, single pole, and is mounted on a slate base and enclosed in a wooden box. The movable side of the Switch is connected to the trolley wire and is so constructed that even when it is open the door can be closed and fastened, thus preventing any interference with the line by an inexperienced person.

Switch complete with box, 100 amp.								list each,	$8.25
"	"	"	"	200	"		"	"	9.50
"	"	"	"	300	"		"	"	11.25
"	"	"	"	400	"		"	"	12.35
"	only, 100 amp.						"	"	7.50
"	"	200	"				"	"	8.75
"	"	300	"				"	"	10.50
"	"	400	"				"	"	11.62

The above are plain finished.

U. S. RADIAL DRILL
FOR HEAVY DRILLING

Length of radius arm, 12 inches; height of column, 31 inches; has a 5-inch feed, with hand wheel, and a quick return by hand. Has rack and pinion adjustment for the horizontal arm. Drill has a positive feed. Can drill at any angle. Columns steel tubing. Hand wheel on top of motor to knock out twist drill. Ball thrust bearing and taper socket. For direct current.

Radial arm or vertical column made any length desired.

Made in two sizes—⅞ inch and 1¼ inch. For 110 or 250 volts.

Prices on application.

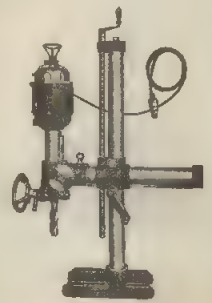


FIG 4461

TYPE E. G. ARRESTERS

350 TO 750 VOLTS D. C.

Pole or Car Arrester, In Iron Cover, Lid Removed

FIG. 4456.

Pole Arrester, In Wooden Cover, Lid Removed

FIG. 4457.

DESCRIPTION AND PRICE LIST

No.	Description	Dimensions, Inches	Net W'ht. Lbs.	Price, Each
1	Iron Covered.....	13⅛ x 6⅜ x 4¾	13¾	$8 00
2	Wooden Covered..	14⅝ x 7 x 6¼	8½	7 00
3	" Car Type.	14 x 7 x 6¼	8½	7.00

The Pole and Car Arrester, illustrated to the left, has a dipped metal finish, but aside from this is the same as the Station type.

Both the wooden and iron covers are thoroughly weatherproof, and of our standard design, fitted with insulating bushings for the leading-in-wires, and the Arrester carefully insulated from the cover.

For car service the iron covered Arrester is recommended, although Arresters will be furnished for car service, enclosed in wooden boxes, as listed above.

The air-gap distance in this Arrester is 1 40 (0.25) inch. The series resistance averages 60 ohms.

FIG. 4458.

I-T-E CIRCUIT BREAKER

SINGLE POLE, STANDARD SWITCHBOARD TYPE

FOR DIRECT CURRENT CIRCUITS

This type of Circuit Breaker is especially designed for use on circuits of 600 volts or less, where heavy currents are used. All working parts are strong and well proportioned; the current carrying parts are made of high grade copper, so proportioned that the heating of any part of the Circuit Breaker will not exceed 20 degrees C. above surrounding temperature in constant use at "actual rating." It has a wide, clean double break, is quick and reliable in action, and will operate within 5% of its adjustment.

The main contacts are protected by a final carbon break designed to meet the severe conditions of opening a circuit of high voltage in an overload or short circuits.

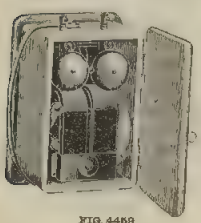


FIG. 4459.

MAGNETO TESTING BELL

These Testing Magnetos are substantially constructed, and the Bells are contained inside of the box, to withstand the rough usage received in testing. They will positively ring through the resistance specified, and contain permanent magnates of the highest grade. Furnished with leather carrying strap and with oak or walnut case.

No.	Description	Price, Each
1	To ring through 25,000 ohms.....	$8.40
2	" " " 35,000 "	9.80
3	" " " 50,000 "	10.50

PHILADELPHIA LAWN MOWERS

Style K

FIG 5837.

10 inch wheel, 5 blades, 6¼ inch cylinder, single pinion, geared on both sides.

For all round general purposes this is one of our best style mowers.

High wheels, it runs light, five knives, it cuts smooth and even.

Of our standard goods this is very popular. It always gives satisfaction.

Inch	14	16	18	20
List price	$20.00	22.00	24.00	26.00

THE EAGLE PHILADELPHIA HORSE MOWER

30, 35, AND 40 INCH. 5 BLADES

FIG. 5838.

Made with added weight of iron for strength; increased diameter of cylinder for draft; and large shafting and journals for durability.

Patent adjustable boxes for taking up the wear of journals; wrought iron front and back girths, making the mower frame solid. Cutting cylinder stationary. Bed knife adjustable to the cylinder. Cylinder blades are riveted to the spiders.

Inch	30	35	40
List price	$100.00	125.00	150.00

With seat and shafts and draft pole and side draft attachment. No reduction is made for seat and shafts for the mower will perform better work with them than without.

PHILADELPHIA 36 INCH (GENUINE) HORSE MOWER

THE BEST HORSE LAWN MOWER MADE IN THE WORLD

FIG. 5839

It has a wrought iron frame and caster roller attachment which can be raised or lowered at the will of driver with the machine in motion. The spiral blades are bolted on the cylinder frame and adjusted by set screws. No other machine has this manner of adjusting spiral knives. Furnished with seat and shafts and side draft attachment.

It is constructed in the most thorough manner with steel shaftings, brass bushings, etc., and while it costs more money, is the cheapest mower on our list when durability, construction and cost is taken into consideration. This mower will give you best results, and satisfaction is guaranteed.

36 inch, list price.....$160.00

PHILADELPHIA HORSE BOOTS

List price.....per set of four, $12.00

PHILADELPHIA HORSE LAWN SWEEPER

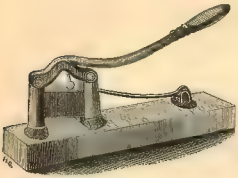
FIG. 5840

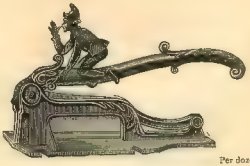
This sweeper gives you a perfect lawn, instead of looking gray for several days owing to the withered cut grass remaining on the lawn.

If the sweeper and horse lawn mower are run in opposite directions the lawn will be nearly the same shade of color all over. The sweeper is drawn by a draft rod, same as the 30 inch pony mower. It is not shown in cut.

40 inch lawn sweeper, list price.....$70.00

Tobacco Cutters





Per dozen

No. 1—Wood Bottom Tobacco Cutter. Japanned..... $9.00
No. 2—Image Tobacco Cutter. All Iron. Japanned..... 6 75

One Dozen in a Case

Each

No. 1—Enterprise Tobacco Cutter. Cuts Plugs 4⅝ inches wide. Tempered Steel Blades..... $1.75

One Dozen in a Case.

Paper Files

Per dozen.

No. 20—Standing File. Adamantine Bronzed Tinned Wire. 6 inches high..... $2.00
No. 12—Hanging File. Enameled Extra heavy wire 1 40

One Dozen in a Box

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

WOOD, MACHINE, CAP AND SET SCREWS; STOVE, TIRE, SINK AND AGRICULTURAL BOLTS

Corbin Duplex

Coaster Brake Model 8

Corbin Band Motorcycle

Coaster Brake Model 11

Corbin Two-speed

Coaster Brake Model 10

Steel and Brass Jack and Safety Chain; Steel and Brass Escutcheon Pins
Special Screws of Every Description

Complete Catalogue on Request

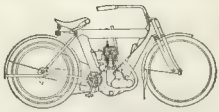
Licensed Coaster Brake Manufacturers

THE CORBIN SCREW CORPORATION

NEW BRITAIN, CONN.

NEW YORK CHICAGO PHILADELPHIA

PIERCE



PROMPT DELIVERIES

Single and Four Cylinder Models

Ask for our Proposition:
"The Agency that Pays."

CATALOG F

THE PIERCE CYCLE CO.

BUFFALO, N. Y.

Wholesale Branch at Oakland, Cal.

The Eclipse Free Engine Pulley

For sale nearly everywhere. If your dealer does not sell it, write to us and we will tell you where it can be purchased.

Price, $15.00

Can be attached to any belt-driven motorcycle. Saves gasoline and muscle, as the power can be shut off on the down-grade and the motorcycle can be started without working against the compression of the engine. It works on the principle of an automobile clutch and for steep hill work can be readily slipped to increase climbing power.

We "made good" with our **Eclipse Coaster Brake**, and we stake our reputation on the **Eclipse Free Engine Pulley**.

We are also manufacturing Aeroplane hubs. If interested, write for particulars.

Eclipse Machine Company

ELMIRA, N. Y.

QUALITY AND SATISFACTION

ARE FOUND IN THE

EMBLEM

MOTORCYCLE AND BICYCLE

4-5 H. P. SINGLE AND 7 H. P. TWIN CYLINDER

POWER AND SPEED

RESPONSIBLE SELLING REPRESENTATIVES WANTED

EMBLEM MFG. CO., Angola (Erie Co.), N. Y.

Standard Motorcycle Parts

Standard Motorcycle Pedals

are just a little bit better than anything else of the kind on the market. That's why machines that are **STANDARD** equipped sell quicker than others.

STANDARD PEDALS wear well. They are strong and light, and the deep corrugations in the rubber hold the foot firmly and absorb vibration. They are reversible, thus enabling the rider to get the fullest service from them.

STANDARD SAGER TOE CLIPS are comfortable and highly efficient; strong and neat in appearance.

Write for details of our complete line, which includes **Spokes** and **Nipples, Bridgeport** and **Star Pedals** and the famous **BREECH-BLOCK Spark Plug**.

Standard Sager Motorcycle Toe Clips

The Standard Co., Torrington, Conn.

QUALITY AND SATISFACTION

ARE FOUND IN THE

EMBLEM

MOTORCYCLE AND BICYCLE

4-5 H. P. SINGLE AND 7 H. P. TWIN CYLINDER

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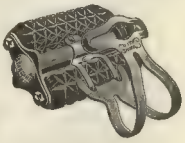
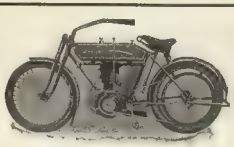


Standard Sager Motorcycle Toe Clips

The Standard Co., Torrington, Conn.



GREYHOUNDS

TRIM, clean-cut, speedy ---the embodiment of all that you want in a motorcycle---are now to be had promptly.

Big, husky motor of the greatest simplicity, all equipment of the best, and comfort devices that make it smoother and easier to ride than any other you ever crossed.

THE GREYHOUND SHOCK ABSORBER and cushion front fork are quite in a class of their own.

Find out about the GREYHOUND if you want motorcycles to ride or to sell.

Catalog free.

Greyhound Motor Works

1453 Niagara St. :: Buffalo, N. Y.

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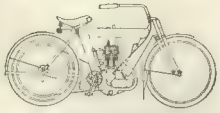
PIERCE



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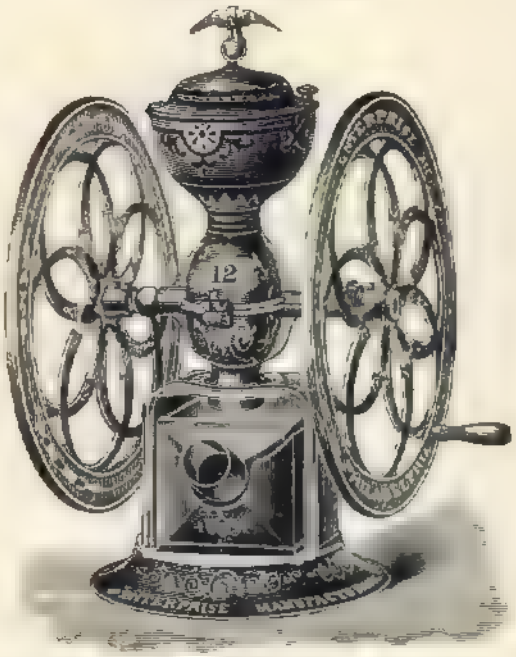
Eclipse Machine Company

ELMIRA, N. Y.

"ENTERPRISE" COFFEE MILLS



NO. 12 AND 212

No.	Capacity of Hoppers	Hoppers	Height	Diameter of Wheels	Weight	Each.
12	5 lbs	Iron	32 in	25 in	141 lbs	$24.00
212	6½ "	"	43 "	31 "	211 "	35.00

Fifty turns will grind one Pound of Coffee.
No. 12, One in a Crate, No. 212, in Two Crates and One Box.

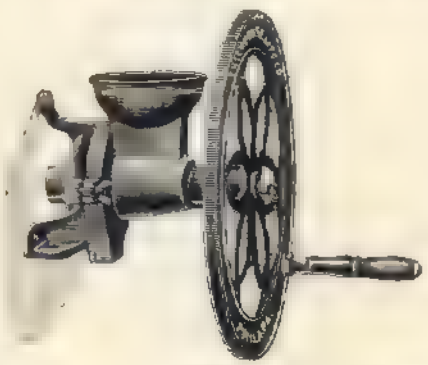
"BLACK HAWK" GRIST MILLS

For Farm and Family use.

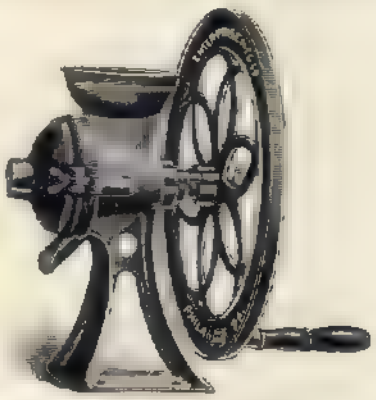
Malleable Iron Crank, Chilled Bearings, Grinding Burrs of the Hardest and Strongest Metal.

"Black Hawk," Weight, 17 lbs Each $4 00

"ENTERPRISE" BONE, SHELL AND CORN MILLS



NO. 650



NO. 750 With Fly Wheel
" 550 " Crank

CAPACITY, 1¼ BUSHELS OF CORN PER HOUR

These Mills are especially adapted for grinding Bones (when dry only), Oyster and other Shells, Corn, Roots, Bark, Grain, Salt, etc.

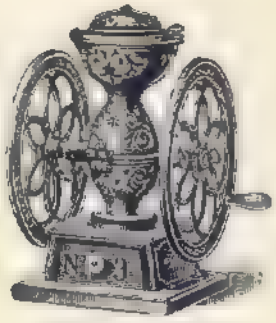
No.	Height	Length	Width	Dimensions of Throat	Diameter of Wheel	Weight	Each
550 With Crank	17¼ in	12 in	8½ in	3x2 in	No Wheel	42 lbs	$7.00
650 With Fly Wheel	11 "	12 "	9 "	3x2 "	19 in.	47½ "	7.50
750 " " "	17¼ "	12 "	8½ "	3x2 "	19 "	60 "	8.50

One in a Crate.

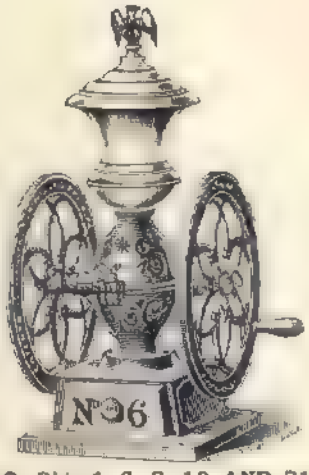
"ENTERPRISE"

COFFEE MILLS

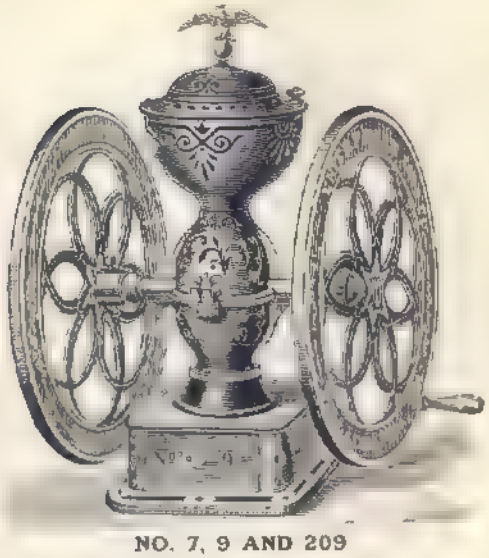
NO. 1



NO. 2, 3 AND 5



NO 2½, 4, 6, 8, 10 AND 210



NO. 7, 9 AND 209

No.	Capacity of Hoppers	Grinds per Minute	Hoppers	Height, inches	Diam. of Wheels, inches	Wgt., lbs.	Each
1	4 oz	6 oz	Iron	12½		10	2.25
2	4 "	6 "	"	12½	8¾	15	3.75
2½	7 "	6 "	Nickel Plated	15	8¾	14	5.00
3	½ lb.	½ lb.	Iron	15	10¾	22½	5.50
4	¾ "	½ "	Nickel Plated	20½	10¾	22	8.00
5	¾ "	¾ "	Iron	17	12½	36	8.00
6	1⅝ "	¾ "	Nickel Plated	24	12½	35	12.00
7	1¾ "		Iron	21½	17	62	11 00
8	2¾ "		Nickel Plated	27	17	59	16.00
9	3 "		Iron	24	18½	107	16.00
209	5 "		"	33	25	156	24.00
10	4½ "		Nickel Plated	28	19½	102	21.00
210	4½ "		" "	37	25	147	30.00

NUMBER OF TURNS REQUIRED TO GRIND ONE POUND OF COFFEE, NO. 7 TO 210

For No	7	8	9	209	10	210
Turns	75	75	75	50	75	50

PACKED AS FOLLOWS

No.	1	2	2½	3	4	5	6
In Case	6	6	6	3	1	3	1

No.	7	8	209	10	210
In Crate	1	1 Crate 1 Box	1	1 Crate 1 Box	1 Crate 1 Box

BAROMETERS

PRICES EACH

Illustrations are Reduced Size

No. 1364

No. 1367

No. 1645

ANEROID

For Wall Use

No. 1364 Brass lacquered case. Diameter 5-inch. Closed porcelain dial. Good quality. Style cut No. 1364 ..... each, $14.85

No. 1365 Brass lacquered case. Diameter 5 inch. Closed porcelain with curved thermometer at base dial. Good quality. Style cut No. 1364 ..... each, 17.00

No. 1366 Brass lacquered case. Diameter 5-inch. Open porcelain, visible works dial. Good quality. Style cut No. 1367 ..... each, 17.00

No. 1367 Brass lacquered case. Diameter 6-inch. Dial, open porcelain, visible works and with curved thermometer at base. Good quality. Style cut No. 1367 ..... each. 19.10

No. 1600 Brass lacquered case. Diameter 3½-inch. Dial, open card, visible works. Fair quality. Style cut No. 1600 ..... each, 3.70

No. 1601 Brass nickeled case. Diameter 3½-inch. Dial, open card, visible works. Fair quality. Style cut No. 1600 ..... each, 5.70

No. 1603 Brass nickeled case. Diameter 4⅛-inch. Dial open card, visible works. Fair quality. Style cut No. 1600 ..... each. 4.25

No. 1604 Brass lacquered case. Diameter 4½-inch. Dial, open card, visible works. Fair quality Style cut No. 1600 ..... each, 7.95

No. 1600

No. 1605 Brass nickeled case. Diameter 4⅝-inch. Dial, open card, visible works. Fair quality. Style cut No. 1600 ..... each, $ 7.10

No. 1606 Brass lacquered case. Diameter 5⅛-inch. Dial, open card, visible works. Fair quality. Style cut No. 1600 ..... each, 6.10

No. 1607 Brass lacquered case. Diameter 3-inch. Dial, open card, visible works. Good quality. Style cut No. 1600 ..... each, 5 70

No. 1615 Brass lacquered case. Diameter 4¼-inch. Dial, open card, visible works. Good quality. Style cut No. 1600 ..... each, 7 65

No. 1616 Brass nickeled case. Dial, open card, visible works. Good quality. Style cut No. 1600 ..... each, 7 65

No. 1645 Golden oak, green oak or mahogany case. Diameter 4-inch. Dial, open enameled. Fair quality. Style cut No. 1645 each, 12.75

HOLOSTERIC

For Wall Use

No. 1626

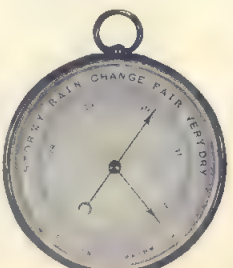
No. 1626 Brass lacquered case. Diameter 5¼ inch. open metal silvered dial. First quality. Style cut No. 1626 ..... each. $32.50

No. 1629 Brass lacquered case. Diameter 5¼ inch. Dial, open metal silver, for use in high altitudes, reading from 23 to 31. First quality. Style cut No. 1626 ..... each. 35 35

No. 1630 Brass lacquered case. Diameter 5¼-inch Dial, open metal silvered, with curved thermometer at base. First quality. Style cut No. 1626. Each 37 45

No. 1633 Brass lacquered case. Diameter 5-inch Closed metal silvered dial First quality Style cut No 1633 ..... each. 23 35

No. 1634 Brass lacquered case. Diameter 5-inch. Closed card dial. First quality. Style cut No. 1633.. ..... each, 20 50



No. 1633

"EVER READY" PORTABLE ELECTRIC LIGHT.

PRICES EACH

STYLE A
Metal case, alligator covered.
Each ... $1 60
Extra with Osram bulb ... 85

STYLE A—SPECIAL
Fibre Case.
Each ... $1 20
Extra with Osram bulb ... 55

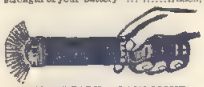
STYLE B
Metal, cloth covered.
Each ... $1 50
Extra with Osram bulb ... 55

BLACK METAL B
Black metal.
Each ... $1 20
Extra with Osram bulb ... 50

Extra Batteries for above, each 30 cents.
Osram Bulbs when purchased separately list $1 10

JUMBO COAT POCKET LIGHTS
Has snap switch, gives permanent light when desired.
No. 80 Size 1¾x3¾x5 inches. Weight, 30 ounces. Each ... $2 20
Extra, with Osram bulb ... 55
Extra Batteries, 60 cents.

POCKET AMMETER
No. 25 Pocket Ammeter. Very convenient for automobile, motor cycle and launch. Used for testing dry cells. Assures you of the strength of your battery ... Each, $4 00



"EVER READY" FLASH LIGHT
No. 1 Pocket, 1¼x3¾ inches ... $2 15

IMPROVED "EVER READY" FLASH LIGHT
Made of material impervious to water
No. 4 Fibre finish, 1¾x3½ inches, each ... $3 80

"EVER READY" MINER'S FLASH LIGHT
Large lens bull reflector.
No. 14 1¼x3¾ inches, each ... $4 40
N B.—Can be furnished with screw button fastener, giving permanent light, when desired, for continuous burning.

OUR SPECIAL LEADER
Metal case, cloth covered, 1¼x3¾ inches.
Comet No. 5 Best value ever offered in flash lights. Has same battery and bulb, and is same size as No. 1 "Ever Ready." Has arrangement for steady light when desired
Price, complete ... $1 50
The above can be fitted with Osram bulb. Extra ... 55c
Batteries for above lights, each 65c.

"EVER READY" ELECTRIC FLASH LIGHTS
The most practical portable lights ever invented They give from 3 600 to 5 000 brief flashes of a few moments' duration and can be used for continuous light if desired Useful wherever and whenever you would use any other light and absolutely safe. Cheaper than matches and candles. Batteries are easily renewed. No wires to connect or chemicals to spill Extra batteries can be obtained in any part of the world.
No. 1851 "Ever Ready" Osram Coat Pocket Light, Size 2¼x6x5 inches. Cloth covered, nickel trimmings ... $2 70
Extra batteries ... 60
Extra bulbs ... $1 10

MINIATURE OSRAM VEST POCKET LIGHT.
Batteries.—The most important part of a flash light is naturally the Battery, as upon the service given and its length of life when not in use depends the efficiency of the article. The batteries furnished with the "Eveready" Miniature Osram Vest Pocket Lights are manufactured by an entirely new principle in dry cells. We are now able to produce a tiny Battery which, in combination with the Osram Bulb, will give greater light, longer service, and will stand longer on the shelf without losing strength than old style batteries sometimes larger.

	Each
No. 6661 2-cell, all Nickel, complete ...	$2 25
Extra Battery, No. 650 ...	60
Extra Bulb, No. 1480, 2½ V ...	1 10

OSRAM LIGHT
No 2704.
Fibre Case, Nickel Trimming, Size 1¼x3¾ inches. Fitted with Osram Bulb, 2½ Volt.
Price ... $2.00
No. 560. Extra Battery ... 50

No. 6662.
Small Vest Pocket Size, Cloth Covered. Fitted with Osram Bulb, 2½ Volt.
Price ... $2 25
No. 562. Extra Battery ... 40

Another Record of Excelsior Endurance

¶ In the endurance run of the Seattle Motorcycle Club from Seattle to Mount Rainier, Washington, out of 32 starters, 7 were tied for high honors, with 998 points each. Of these

Four were Excelsiors

One each of three other makes making up the seven. Not only this, the four Excelsiors tied for high place were as many in number as succeeded in finishing of any other of the six makes of machines competing.

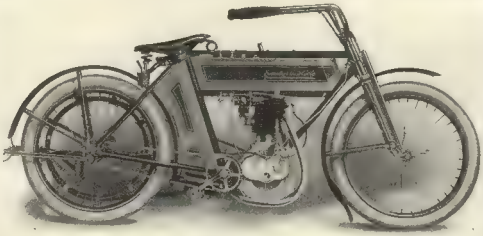
Whether on the level or up the side of a mountain

EXCELSIOR QUALITY
ALWAYS MAKES GOOD

EXCELSIOR SUPPLY COMPANY

(ESTABLISHED 1876)

Randolph Street Bridge - - - - Chicago, Ill.



BAITS

EUREKA

FLUTED BAIT

Fig. 8949A

KIDNEY BAIT

Fig. 8949B

SKINNER BAIT

Fig. 8949C

Price, Eureka No. 1 to 7 Fluted Baits, sizes 1 to 7	each	.15
" " " Kidney " " 1 " 7	"	.15
" " Assorted Baits, size 4, six Assorted Patterns on Perforated Card	"	.90
Skinner Fluted Baits, sizes 1 to 4¼	per dozen	.3 00
" " " " 5 and 6	"	4 00
" " " " 7 " 8	"	5 00
" " " " 9	"	6 00
" " " " 12	"	11 00

KINGFISHER SCOTCH SILK BODY PHANTOM MINNOWS

Fig. 8949D

Number	1 to 5	6
Price each	60	.75

With Swivel and Bronze Treble Hooks, Blue, Brown Spotted and Silver Colors.

SNELLED HOOKS

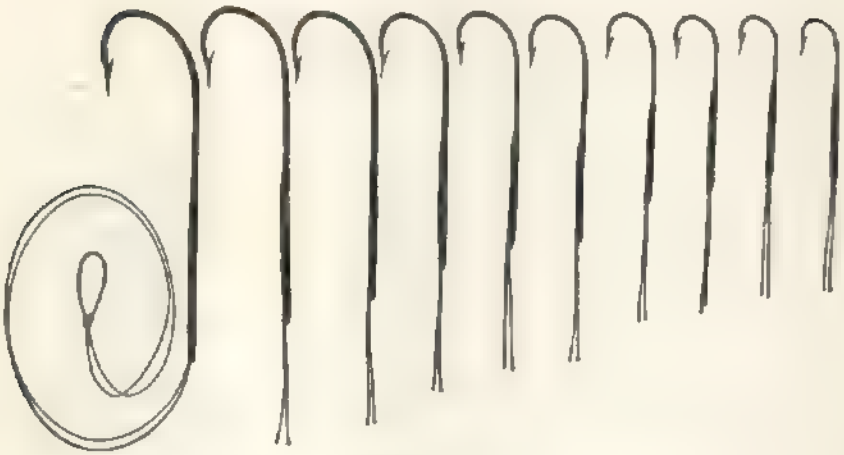


Fig. 8948A

Cuts Two Thirds Actual Size

COMPARISON IN SIZES OF SNELLED HOOKS

Carlisle, Sproat, Needle	1 to 10	1/0	2/0	3/0	4/0	5/0	6/0
Cincinnati Bass	22 to 26	21	20	19	18	17	16

CARLISLE, SPROAT, AND CINCINNATI BASS SNELLED HOOKS, MIST COLORED DOUBLE GUT

Number	6/0	5/0	4/0	3/0	2/0	1/0	1 to 10
Price, Each Hook Quarter per dozen	70	60	50	50	40	30	30

SUPERIOR GRADE TROUT FLIES

Fig. 8948B

Price Silk Body or Kingfisher Hollow Point Sproat Hooks Nos. 6, 8, 10, 12 . . . . per dozen 50

12 Selected Patterns in stock.

TROUT BASKETS AND BASKET STRAPS

Fig. 8948C

Price, No. 2 French Willow Basket, 13 pounds	each	1 75
" " 3 " " " 19 " " "	"	2 25
" " 4 " " " 25 " " "	"	2 50
" " 3 Basket Strap, Web 17 x 3½ inches, 56 inches overall	"	25
" No. 3 Basket Strap, Web 20 x 2½ inches, Long Leather Strap 26 x ⅞ inches, Short Strap 7 x ⅞ inches	"	18

"FORT PITT" HATCHETS

FIRE BRONZE FINISH

Shingling—Regular Straight Poll

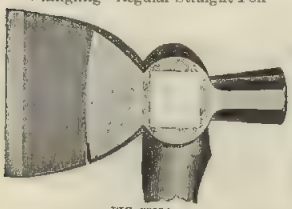


FIG. 2359A.

Half—Regular Straight Poll

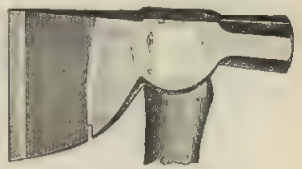


FIG. 2359B

AMERICAN CRUCIBLE CAST STEEL BIT, POLISHED, FIRE BRONZE FINISH, SHARPENED AND READY FOR USE, ALL WHITE HANDLES

Size	Cut, in.	Average Wt. Per Doz.	Per Doz.	Size	Cut, in.	Average Wt. Per Doz.	Per Doz.
1	$3\frac{1}{2}$	20 pounds	$8.00	1	$3\frac{1}{4}$	22 pounds	$8.50
2	$3\frac{7}{8}$	25 "	8.50	2	$3\frac{3}{4}$	25 "	9.00

Derrick or Rig Builders'—Regular Straight Poll, 18 inch Knob Handle

FIG 2360C.

Lathing—Regular Straight Poll

FIG. 2359D

AMERICAN CRUCIBLE CAST STEEL BIT, POLISHED, FIRE BRONZE FINISH, SHARPENED AND READY FOR USE, ALL WHITE HANDLES

Size	Cut, in.	Average Wt. Per Doz.	Per Doz.	Size	Cut, in.	Average Wt. Per Doz.	Per Doz.
3	3	40 pounds	$10.00	1	$3\frac{1}{4}$	18 pounds	$8.00
				2	$2\frac{3}{4}$	20 "	8.50

Claw

FIG. 2359E.

Broad or Bench

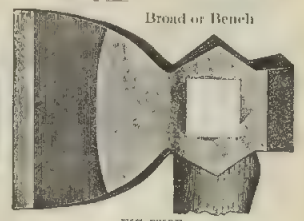


FIG. 2359F

AMERICAN CRUCIBLE STEEL BIT, POLISHED, FIRE BRONZE FINISH, SHARPENED AND READY FOR USE, ALL WHITE HANDLES

Size	Cut, in.	Average Wt. Per Doz.	Per Doz.	Size	Cut, in.	Average Wt. Per Doz.	Per Doz.
1	$3\frac{1}{2}$	22 pounds	$9.00	2	$4\frac{1}{2}$	28 pounds	$11.50
2	$3\frac{7}{8}$	25 "	9.50	3	5	33 "	13.00
..	.. ..	.....	.....	4	$5\frac{1}{2}$	37 "	14.50

"MONARCH" HATCHETS

BLUE FINISH

Shingling—Regular Straight Poll

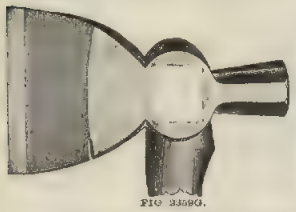


FIG 2359G.

Half—Regular Straight Poll

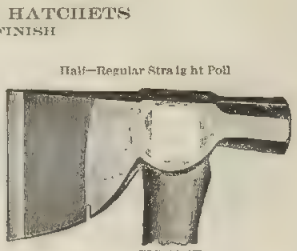


FIG. 2359H

CAST-STEEL BIT, POLISHED, BLUE FINISH, ALL WHITE HANDLES

Size	Cut, In.	Average Wt. Per Doz.	Per Doz	Size	Cut, In.	Average Wt. Per Doz	Per Doz.
1	$3\frac{1}{4}$	20 pounds	$8 00	1	$3\frac{1}{4}$	22 pounds	$8.50
2	$3\frac{7}{8}$	25 "	8 50	2	$3\frac{3}{4}$	25 "	9 00

Lathing—Regular Straight Poll

FIG 2359I

INSERTED CAST-STEEL BIT, POLISHED, BLUE FINISH, ALL WHITE HANDLES

Size	Cut, Inches	Average Weight Per Dozen	Per Dozen
1	$2\frac{1}{2}$	18 pounds	$8 00
2	$2\frac{3}{4}$	20 "	8.50

Claw

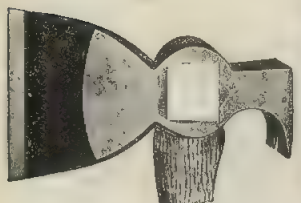


FIG. 2359J.

Bench

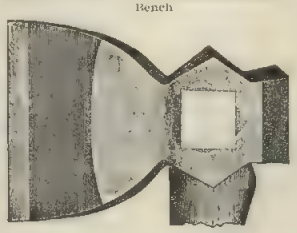


FIG. 2359K.

CAST- STEELBIT, POLISHED, BLUE FINISH, ALL WHITE HANDLES

Size	Cut, In	Average Wt. Per Doz.	Per Doz	Size	Cut, In.	Average Wt. Per Doz.	Per Doz.
1	$3\frac{1}{2}$	22 pounds	$9 00	2	4	28 pounds	$11.00
2	$3\frac{7}{8}$	25 "	9 00	3	5	33 "	13.00
				4	51	37 "	14.50

FIRE PAILS

PAINTED RED OUTSIDE FLAT BOTTOM

Flat Bottom

FIG. 1438.

Quarts	8	10	12	14	16
Size. in.	9¼x8½	10½x8¾	11x10	11¼x10½	12¾x11¼
List per dozen	$5.42	5.55	6.00	6.66	8 00

ROUND BOTTOM

Round Bottom

FIG 1439.

Quarts	10	12	14
Size inches	9¾x10¾	10¼x10¾	11x12
List per dozen	$5.80	6.22	6.90

GALVANIZED. ROUND BOTTOM

FIG 1440

Quarts	10	12	14
Size inches	9¾x10¾	10½x10¾	11x12
List per dozen	$6.66	7.10	9.00

CONICAL

FIG 1441

Quarts	10	14
Size inches	13 x15	14½x15½
List per dozen	$8 07	$ 51

WATER PAILS

GALVANIZED, PLAIN BODIES

FIG. 1442.

Quarts	8	10	12	14	16
Size. inches	9¾x8¾	10½x8¾	11x10	11½x10½	12¼x11¼
List per dozen	$3.78	4.22	4.80	5.33	6.66

HEAVY PAILS

List per dozen	$5.11	5.56	6.00	6.66	8.00

EXTRA HEAVY

List per dozen	$7 00	7.56	8.00	8 77	10.00

CEMENT PAILS

GALVANIZED. EXTRA HEAVY. DOUBLE BRACED BOTTOMS

Cement Pail

FIG. 1443.

	Without Hoop	With Riveted Hoop	With Welded Hoop
Quarts	14	14	14
Size, in	11¾x10½	11¾x10⅝	11¾x10¾
List, pr doz.	$9.50	11.70	14 70

Water Pail

FIG. 1444.

WATER PAILS

HEAVY WIRE BAIL, WITH WOOD ROLL, STRIPED WITH TWO RED BANDS. GALVANIZED

Quarts	12	14
Size inches	11½x10	12x10½
List per dozen	$7.34	8 00

FIG 1445.

THE WHITE STAR OIL FILTER

ROUND TYPE

High efficiency in engine lubrication can be attained only by feeding to the bearings a copious supply of oil. Only a small percentage of the total oil fed is actually worn out in the work of lubrication; the greater portion passes away at the drips, carrying with it more or less dirt or grit. By removing this foreign matter, the oil may be made suitable for feeding again to the bearings. This work the White Star Oil Filter does in effective manner, purifying all oily drips and dirty oil so that they may be used over and over in the bearings like new oil. With this filter in use the lubrication of bearings may be much better than without it, inasmuch as the oil may be used as freely as desirable, knowing that none is wasted.

Net reductions of from 50 to 75 per cent in oil bills are regularly effected after installing a White Star Filter, the amount of saving depending upon the state of affairs before the filter is used and upon the extent to which advantage is taken of its presence afterward. The cost is so small in comparison to the savings resulting from its use that the original investment is quickly repaid, and then the oil economy continues as a net saving.

Showing Cylinder Extended

FIG. 1446.

The work of purification is effected in two operations: First, precipitation of foreign matter by gravity, assisted by heat; second, removal of all remaining impurities by filtration through a fine, yet freely porous, medium of uniform character. The combination of these two principles insures a perfection of purification which cannot be secured by either one alone. Only in the White Star Filter is the work of purification so thoroughly done.

In the precipitation chamber, which receives the dirty oil, hangs a funnel with a sieve top—removable for cleaning—and a pipe spout extending downward through the loops of a steam coil, to terminate in a conical piece having holes in its flaring surface and a screw cap forming its bottom. Water, poured in when starting the filter and maintained by accumulation from oily drips thereafter, covers the bottom of the funnel pipe and the

T-1144

FIG 815.

POCKET ANEROID BAROMETERS

COMPENSATED AND SPECIALLY TESTED AND ADJUSTED FOR ENGINEERS' USE

These Aneroids have movable altitude scales, with silver enameled dials, and are in morocco cases.

T-1144. Pocket Mountain Aneroid, compensated for temperature, 1¾" diameter, with altitude scale to 3,000 feet $18.50

T-1145. Pocket Mountain Aneroid, compensated for temperature, 1¾" diameter, with altitude scale to 5,000 feet 18.50

T-1146. Pocket Mountain Aneroid, compensated for temperature, 1¾" diameter, with altitude scale to 11,000 feet 18.50

T-1147. Pocket Mountain Aneroid, compensated for temperature, 1¾" diameter, with altitude scale to 15,000 feet 20.00

T-1148. Pocket Mountain Aneroid, compensated for temperature, 1¾" diameter, with altitude scale to 20,000 feet 22.50

T-1149. Pocket Mountain Aneroid, compensated for temperature, same as T-1144, 2¼" diameter, with altitude scale to 3,000 feet 19.00

T-1150. Pocket Mountain Aneroid, compensated for temperature, same as T-1144, 2¼" diameter, with altitude scale to 5,000 feet 19.00

T-1151. Pocket Mountain Aneroid, compensated for temperature, same as T-1144, 2¼" diameter, with altitude scale to 11,000 feet 19.00

T-1152. Pocket Mountain Aneroid, compensated for temperature, same as T-1144, 2¼" diameter, with altitude scale to 15,000 feet 20.50

T-1153. Pocket Mountain Aneroid, compensated for temperature, same as T-1144, 2¼" diameter, with altitude scale to 20,000 feet 23.50

GEOLOGICAL ANEROIDS

T-1154—Front

FIG 816.

Back

FIG. 817.

T-1154. Geological Aneroid compensated for temperature, silvered metal dial, with needle compass at back, 2½" diameter, in leather sling case, with altitude scale to 5,000 feet $30.00

T-1155. Geological Aneroid, compensated for temperature, silvered metal dial, with needle compass at back, 2½" diameter, in leather sling case, with altitude scale to 10,000 feet 31.00

T-1156. Geological Aneroid, compensated for temperature, silvered metal dial, with needle compass at back, 2½" diameter, in leather sling case, with altitude scale to 15,000 feet 33.50

OBSERVATORY BAROMETERS AS SUPPLIED TO UNITED STATES WEATHER BUREAU, ETC.

T-1080

FIG. 812.

T-1085

FIG. 813.

T-1086

FIG. 814.

T-1080. Observatory Barometer, with scale extending down to 26", approximate altitude of 4,000 feet (divided in 10ths of an inch), and reading by vernier, to 1/100th of an inch. The tube has a bore of .25 inch, and the mercury therein is perfectly free from air and moisture. The attached thermometer consists of a well seasoned tube with graduations and mounted so that it can be easily removed for testing. Price of Barometer without board or box..... $50.00

T-1082. Observatory Barometer, with scale extending to 21", approximate altitude of 6,000 feet, divided into 10ths of an inch, and reading by vernier to 1/100..... 55.00

T-1084. Mahogany Board for suspending Barometers T-1080, 1081, 1082 and 1083 with hook to receive ring, and steadying screws at the bottom, having a piece of white enamel at either end, making a pleasant background for reading the instrument... ..... 5.00

T-1085. Mahogany Box, with lock and key, and provided with iron brackets. The front and sides turn back, disclosing the Barometer ready for use. In other respects its fittings are similar to T-1084..... 10.00

GOFF'S FIRE PROOF SAFES

Outside Style of Sizes 45, 47 and 51

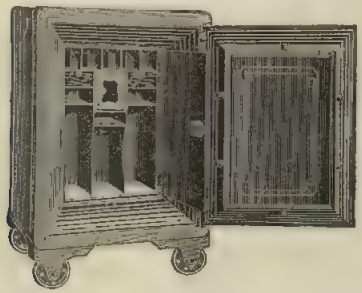


FIG 6947.

Safe No.	Outside Measure			Inside Measure			Approx. Weight	List Price
	High	Wide	Deep	High	Wide	Deep		
35	22	15	16	11⅞	9	8⅜	225	$40.00
37	26	16	17	13	9	10	350	46.00
39	29	18¼	18	15	10	10	500	56.00
41	32	22¼	22¼	18	14	12½	750	75.00
45	37½	24	25¼	22½	16½	13⅛	1000	110.00
47	41	27	26	26	18	14	1260	130.00
51	50	31	28½	30	20	14⅜	1900	170.00

Above are single door safes. Styles 45, 47 and 51 have inside doors.

DOUBLE DOOR SAFES WITH INSIDE DOOR

Safe No.	Outside Measure			Inside Measure			Approx. Weight	List Price
	High	Wide	Deep	High	Wide	Deep		
61	51	37	30	30	26	15	2500	$270.00
63	58	38	30	48⅛	26⅛	15	3100	350.00
65	64½	42	31	42⅜	29⅛	6	3850	370.00

All safes are heavy and guaranteed absolutely fire proof. Measurements are in inches. Outside height includes wheels.

Purchaser's name painted on safe free.

We have a large variety in addition to above sizes.

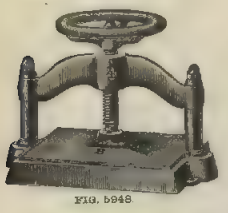


FIG. 5948

COPY PRESS, STYLE B

No.	Size of Follower, In.	Finished in Plain Black, Price	Finished in Black and Bronze, Price
4	10x12½	$5.25	$5.75
5	10x15	6.00	7.00
6	11x16	9.00	10.50
8	12x18	11.75	13.50

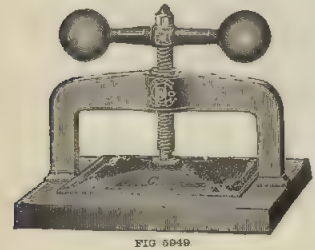


FIG 5949

COPY PRESS, STYLE G
WITH BALL LEVER AS SHOWN

Finished in black, carmine and bronze, with nickel plated ball lever and nut.

No.	Size of Follower, Inches	Price
4	10 x 12½	$18.00
5	10 x 15	21.00
6	12 x 17	23.00

FIG. 5950.

COPY PRESS STAND, NO. 2

Hard oil finish, finely polished Inside measurement of drawers, 12½ x 19 x 2¼ inches.

Nos. 1 and 1½, with one drawer and slide, walnut or cherry, $9.50; oak, $8.50.

Nos. 2 and 2½, with two drawers and slide, walnut or cherry, $11.50; oak $10.25.

Falling leaves $2.00 each extra.

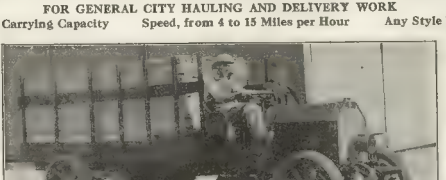
Walnut will be sent unless cherry is ordered.

If other styles are wanted send for special catalogue.

THE AVERY COMMERCIAL TRUCK

FOR GENERAL CITY HAULING AND DELIVERY WORK

3-ton Carrying Capacity Speed, from 4 to 15 Miles per Hour Any Style Body



The Lumber Company owning the Avery Truck shown above, writes:

"Delivered a load of 5000 lbs., eight miles in the country, with a team in five hours. Delivered two loads of the same size with our Avery Truck and made the two trips in four and one-half hours."

Avery Trucks have demonstrated that they are Reliable Money Savers for Users.

Ask for catalog with description and actual working scenes.

Live, Responsible Automobile Dealers, or other Individuals or firms of good financial standing and with the ability and push to get the business can get a good Money Making Agency Proposition in Territories not already contracted, by writing at once direct to the manufacturers.

AVERY COMPANY

952 Iowa Street Peoria, Ill.

The delivery wagon that doesn't have any trouble at all is the

Atlas — Two Cycle Motor Cars

Hundreds of firms that have quit using horses for deliveries are sorry. Why? Because the motor wagons they bought are always getting stalled or going wrong in one way or another—causing delays and costing more in repairs than they save.

Yes—a good share of all this is due to bad drivers.

But what are you going to do? You *can't* change the drivers. So the answer is: Sell them a wagon that a cheap driver *can't* have trouble with. That's the *Atlas*.

Do you know that the Atlas engine *has no valves and only 5 moving parts?* One crank shaft —two pistons— two piston rods. That's all. *Of course* it can't make trouble. How can it? Nothing but a *wreck* can stop the Atlas.

This wonderful engine is the same engine, hair for hair, that goes in the celebrated Atlas Taxicabs—the famous trouble-proof Atlas Taxicabs that hard service, rough use, careless chauffeurs and blizzards, all put together, can't worry or tire out. This Atlas engine is *some engine!* You ought to know all about it. Why don't you let us send you our catalogue? It's mighty good reading. Write us today.

HERE ARE THE SPECIFICATIONS of the Atlas Delivery Wagon—the Delivery Wagon that really delivers the goods: Twenty horsepower, two-cylinder, vertical two-cycle engine, with unit power plant on three point suspension; plate-clutch with raybestos face, engine 4½"x4½", large water-jacket with centrifugal pump circulation, left hand steering wheel, shifting levers in middle, with extra heavy three-speed selective sliding gear transmission made by the Atlas Company, adapted to heavy work; full-floating type rear axle of finest construction on Timken bearings throughout; shaft drive; front axle, I-beam with Timken bearings, 32"x4½" tires, front and rear; body of extreme rigidity and strength, Atwater Kent ignition; everything simplified to lowest terms, and we aim to durability and low upkeep expense. Capacity, 1500 lbs. List price, $2000. Carrying space, 6 feet x 4 feet and 5 feet high. The Atlas line for 1911 includes also

20 H. P. Taxicab, $2400 20 H. P Torpedo Runabout, $1250 40 H P Touring Car, $2400 60 H. P. Touring Car, $2500

And about that catalogue—just write us for it now—while you have it on your mind

ATLAS MOTOR CAR COMPANY, Springfield, Mass. New York Branch 1924 Broadway

Licensed Under Selden Patent

Grabowsky The Master Commercial Car

Supreme in Quality—Efficiency—Durability

MR. BUSINESS MAN!

Investigate the world's only car with a Removable Power Plant, Hardened Steel Bushings, Emergency Condensing Chamber in Radiator, Positive Mechanical Oiling System.

These amazing exclusive features absolutely insure better, quicker and cheaper delivery service than any other power wagon in the world, which facts we stand ready to prove.

"We Guarantee Service"

(22)

ATTENTION, DEALER!

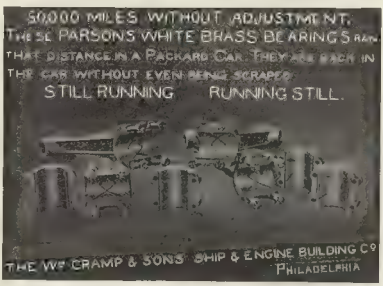
Being proved money makers, the demand for **"The Grabowsky"** is enormous. Selling this quality car you can talk facts and show them. Its seen-at-a-glance superiority makes it a quick selling, satisfactory, promoting line.

Investigation convinces it is the commercial power wagon that fills every requirement of the business world.

Grabowsky DETROIT POWER WAGON Co.

121 Champlain St., Detroit, Mich.

CRAMP


50000 MILES WITHOUT ADJUSTMENT.
THESE PARSONS WHITE BRASS BEARINGS RAN
THAT DISTANCE IN A PACKARD CAR. THEY ARE BACK IN
THE CAR WITHOUT EVEN BEING SCRAPED
STILL RUNNING
RUNNING STILL.
THE WM CRAMP & SONS SHIP & ENGINE BUILDING Co
PHILADELPHIA

4-Wheel Drive Gas-Electric

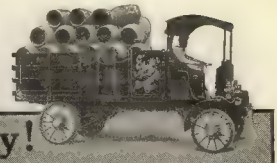
(Something New)

Send for Catalogue. Agents Wanted.

COUPLE-GEAR FREIGHT-WHEEL CO.

560 BUCHANAN ST., GRAND RAPIDS, MICH.

Dealers, Seize This Opportunity!



The commercial car is destined to become the biggest part of the automobile business—you know this. Look ahead and prepare for the future. Make arrangements **now** to handle the best power wagon built.

Grabowsky Power Wagons

We Guarantee Service

The Grabowsky, **with its removable power plant, its hardened steel bushings, its emergency condensing radiator,** its positive mechanical oiling system and interchangeable unit construction, stands as the last word—the best word—in commercial power vehicles.

The Grabowsky is a big, quick money-maker for the live dealer. Write us at once for our special dealers' proposition. It points the way to profits.

GRABOWSKY POWER WAGON CO. 121 Champlain Street DETROIT, MICH.

The ATTERBURY Commercial Cars

are known as the world's standard, as we are the oldest manufacturers of trucks and delivery wagons in America. The Atterbury car is made up of the best material and most careful workmanship. Write for catalogue of delivery wagons, trucks, sight-seeing cars and hotel buses.

Atterbury Motor Car Co.
BUFFALO, N. Y.

Washington Motor Car Co. Business Wagon

This Business Wagon

runs smoothly, requires little attention and can always be depended upon because the

Morse Silent-Running Rocker-Joint Chain

is used for power transmission. It is 99 per cent efficient; requires the least lubrication.

Send for Catalogue No. 7

Morse Chain Co.
Ithaca, N. Y.

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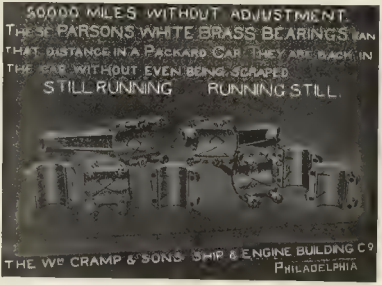
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THESE PARSONS WHITE BRASS BEARINGS RAN
THAT DISTANCE IN A PACKARD CAR. THEY ARE BACK IN
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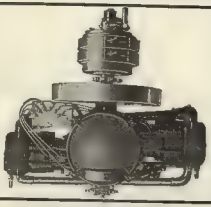
RUNNING STILL.
THE WM CRAMP & SONS SHIP & ENGINE BUILDING CO
PHILADELPHIA



A CHORUS OF PRAISE

is invariably heard at the mere mention of the name **ANDERSON MOTORS.**

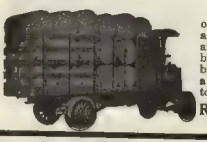
FOR COMMERCIAL TRUCKS
they are simply the "best ever."

Compact	Non-Vibrating
Powerful	Perfectly balanced
Light	Easy Accessible
Silent	Smooth Running

Could you possibly ask for more?

ANDERSON MOTOR CO., 16th and Jackson Streets ANDERSON, INDIANA

Rapid



Commercial Power Wagons

offer greater money-making possibilities to the live agent or business man, with financial backing, than any other line. Rapid Commercial Power Wagons are built in sizes from ½ to 6 tons capacity, for any line of business. Every user of one or more horses represents a prospective buyer. See the possibilities now? Write today for catalog and agent's prospectus.

RAPID MOTOR VEHICLE COMPANY
211 Rapid St., Pontiac, Mich., U. S. A.

"Functional Complexity with Structural Simplicity"
Gearless Clutchless Valveless

KEARNS

High Wheel Solid Tire Automobiles

Get our Literature. Dept. A.

Kearns Motor Car Co., Beavertown, Pa.

No. 25 BARRETT PIPE FORCING JACK

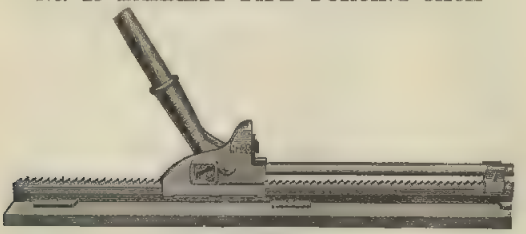


FIG 5477

The Barrett Pipe Forcing Jack represents a special application of the Barrett Jack for forcing pipe horizontally through the ground. It may be used advantageously for forcing pipe under lawns, sidewalks, street crossings and railway tracks, thereby saving large expense and inconvenience for ditching and replacing. This Jack consists of a cage, which travels on a rack, being moved by a socket lever and pawls. At the front of the cage is a groove and clamp for holding pipe from ⅝ to 4 inches in diameter

Capacity.....tons	15
Total Length.....feet	8¾
Travel of Cage..... "	7¼
Weight.....pounds	185
Code Word	Pipe
List Price .....each	40.00
Discount	

FIG. 5478.

BARRETT MOTOR ARMATURE LIFT

We arrange these armature lifts to suit the depth of any pit.

Arranged for a pit about four feet deep, the principal dimensions are.

Width,	inches	20
Length	"	33
Gauge	"	24
Height Bar Down	"	36
Range of Bar	"	24
Side Adjust't	"	6
List Price	each	75.00
Discount		

When ordering, always send sketch showing depth of pit, diameter of armature, and conditions under which lift is to be used.

GRACEY'S IMPROVED DOUBLE ACTING RATCHET PULLING JACK

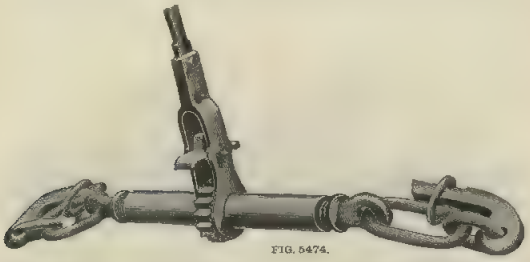


FIG. 5474.

A handy tool for pulling and lifting in building and bridge construction. Capacity, 7 to 10 tons, according to size.

18 in.	Ratchets,	1⅝	in. Screw	$7.00
24 "	"	1⅝	" "	7.50
30 "	"	1⅝	" "	8.00
36 "	"	1⅝	" "	9.50
24 "	"	1¾	" "	16.00
30 "	"	1¾	" "	17.00
36 "	"	1¾	" "	18.00

COUPLING AND JACK RATCHETS

FIG. 5475.

With Locks

FIG. 5476.

Ratchet Couplings with Locks or Hooks, very desirable for Erectors. Also Jack Ratchets made to order and kept on hand.

Square Thread				Price, Each	
				With Locks	With Hooks
18 inch	barrel,	1⅝	screw	$5.12	$6.80
24 "	"	1⅝	"	5.85	7.00
30 "	"	1⅝	"	5.55	7.40
36 "	"	1⅝	"	6.00	7.67
18 "	"	1¾	"	10.80	14.00
24 "	"	1¾	"	11.33	14.67
26 "	"	1¾	"	11 65	15.00
28 "	"	1¾	"	12.00	15.33
30 "	"	1¾	"	12.66	16.00
36 "	"	1¾	"	13.33	16.66

PRICE LIST OF PARTS FOR GREAT WESTERN PLOWS

FIG. 4967.

Name of Part	No. of Part	Number of Plow 105	105	111	113
Landside Point	47	$3 00	$3 50	$4 25	$5 25
Standard and Cap	51	2 25	2 75	3 00	4.25
Mold-board	43	2 50	3 00	3 75	5 00
Cutter	44	1 25	1 25	1 50	1 50
Shoe or Slide	42	.75	75	1.00	1.00
Shoe Clamp	46	40	40	.50	.50
Clevis and Rings	52	.65	65	75	75
Handles with Handholds	40 & 41	1.75	1 75	1 75	1 75
Handles—Wood only	49	.75	.75	75	.90
Iron Handhold	48	1 00	1 00	1 00	1 70
Drag Iron	45	60	60	60	60

In ordering, be particular to state size of plow and whether right or left hand, and also the number of the part as given above corresponding to cut of same.

NO. 5 OR 15 TOWNSHIP OR ROAD PLOWS

IRON HAND HOLD AND HANDLES IRONED

No. 5, left hand, or No. 15, right hand. Cuts 10 inches wide, 12 inches deep. Weight, 135 lbs. This plow is made specially for township road work, and is the best plow on the market for that purpose. Beam of toughest butt cut white oak, selected; length, 6 feet, and 3 x 5½ inches at standard. Wrought iron V-shaped standard; the best made; cannot be broken; secured to beam with two strong bolts, and cannot be twisted or broken off. Heavy iron strap underneath beam, extending from standard to clevis, and securely bolted to both. The mold-board, point, landside and cutter, are made from the very best wrought steel, thoroughly hardened, and will scour in any soil. Wrought iron clevis, with two heavy rings, as shown in cut, and our own pattern Reversible Cutter.

FIG. 4968.

This plow has great strength, but is lighter than our well-known Grading Plows, Nos. 3 and 13. It will run perfectly steady in all kinds of ground, and is very light draft for two horses, but is frequently used with four. Cuts a furrow 10 inches wide and from 6 to 11 inches deep, as desired.

Furnished with Gage Wheel or Gage Shoe same as No. 3 or 13 plow, when specially ordered, which is charged extra. Extra points are charged extra.

Price.....$ .....

NO. 3 OR 13 RAILROAD OR GRADING PLOWS

THE CONTRACTOR'S CHOICE—IRON HAND HOLD AND HANDLES IRONED

No. 3, left hand. Weight, 180 pounds. No. 13, right hand. Weight, 180 pounds. This plow is of great strength and remarkable lightness of draft. The beam is the toughest butt cut white oak, carefully selected; length, 7 feet and 3¼ x 7 inches at standard. Handles braced. The standard is of wrought iron, V-shaped, secured to beam by two strong bolts, and will not twist or break. The strongest standard known. The point, landside, mold-board, and cutter are of the very best wrought steel. It has an adjustable gage wheel, 3 x 6½ inches. The beam is heavily ironed on both sides, with heavy iron strap underneath, extending from standard to clevis, and securely bolted to both. Now made with wrought iron clevis, having two strong rings, as shown in cut.

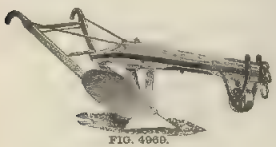


FIG. 4969.

Extra points are charged extra. Price.....$ .....

Also furnished with heavy steel gage shoe, in place of gage wheel when so ordered.

THE GREAT WESTERN RAILROAD PLOWS

BEST CONTRACTORS' GRADING PLOW MADE

FIG 4964.

TWELVE-HORSE PLOW, No. 103

The standard, mold-board and point are made of extra quality of wrought steel. The mold-board and point are made of the best plow steel, and both double shinned. The handles and beam are of the best second-growth hardwood lumber, with handholds solid steel. Plows Nos. 101 and 103 are also provided with a heavy improved steel shoe, or runner, upon the side to protect the handles when the plow is dragging. Made in four sizes, and right or left hand. All sizes are provided with best reversible steel cutters.

The principal strain is carried by heavy steel draft rod underneath the beam, and the entire plow is constructed to stand the very hardest usage. They cut 12 inches with light draft.

FOUR-HORSE PLOW, No. 105

This plow is medium size between Nos. 101 and 106. It cuts 10 inches, and while not intended for extremely hard material, is strong enough for any material that four horses can break. In ordering, please specify whether right or left hand plow is wanted. It is a great favorite with contractors.

No. 106, Two Horse

FIG 4965.

No. 105, Four Horse

FIG. 4966.

In ordering any plows in this list, it is necessary to state the size by number, and whether they are desired right or left hand.

We can supply Contractors on any kind of work with just such a plow as they desire, they deciding for themselves how large a plow their work requires. Prices for plows include one extra landside point. A wrench goes with every plow.

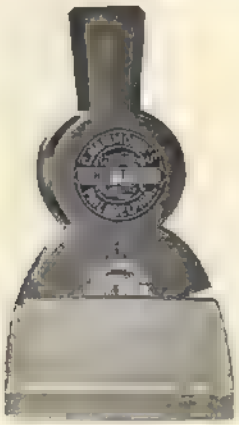
TABLE OF SIZES, WEIGHTS AND PRICES

No.	Horse-Power	Weight	List Price, Each	Landside Points	
				Weight	List Price, Each
106	2 to 4	135 pounds	$25 00	19 pounds	$4.50
105	4 " 6	170 "	30.00	21 "	5.00
101	6 " 8	220 "	38.00	33 "	6.00
103	12 " 14	300 "	45.00	48 "	7.50

Our Twelve-Horse Power Plow, No. 103, is strong enough for fourteen horses. It will work in the hardest material for months without injury, except the wear on the share, mold-board, etc., incident to that kind of work.

We recommend No. 103 Plow for hard-pan frost, loose rock, etc. Our Six-Horse Plow, No. 101, is really strong enough for eight horses. No. 105 is our Four-Horse Plow, and is strong enough for use in any material that number of horses can break. No. 106 Plow, for light soil, requiring only two horses but strong enough for four, cutting 10 inches, gives universal satisfaction.

SHINGLING HATCHETS



HAMMOND

Forged from Swedish Iron, Tool Steel Head and Cutting Edge. Half Polished, Bronze Finish.

No.		Per dozen.
10	Size 1, 3¼ inch Cut	$10.00
11	" 2, 3¾ " "	10.50
12	" 3, 4 " "	11.00

All Steel with best Tool Steel on Head and inserted for Cutting Edge.

Full Polished.

No.		Per dozen.
20	Size 1, 3¼ inch Cut	$12.00
21	" 2, 3¾ " "	13.00

Extra White Hickory Handles.

Half dozen in a Box.

HAMMOND

Best Refined Crucible Cast Steel, Adze Eye, Bell Pole, Full Polished.

Extra White Hickory Handles.

No.		Per dozen.
25	Size 1, 3¼ inch Cut	$15.50
26	" 2, 3½ " "	16.50

HALF HATCHETS

RUSSELL, CAST STEEL

Half Polished, Bronze Finish.

Hickory Handles.

No.		Per dozen.
1	3¼ inch Cut	$5.00
2	3½ " "	5.50

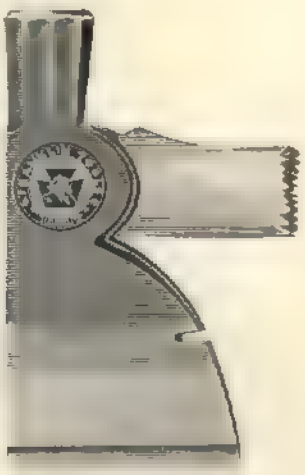
TACONY

Forged from one piece of Solid Steel, Half Polished, Blued Finish

White Hickory Handles.

No		Per dozen.
1030	Size 1, 3¼ in. Cut	$6.75
1031	" 2, 3½ " "	7.00
1032	" 3, 3¾ " "	7.50

Half dozen in a Box.



FRANKLIN, CAST STEEL

Hickory Handles.

No.		Half Polished Bronze Finish. Per dozen.	Full Polished. Per dozen.
1	3¼ in. Cut	$8.50	$11.00
2	3½ " "	9.00	11.50
3	3¾ " "	9.50	12.00

HALF HATCHETS

WINCHESTER, SOLID STEEL

Hickory Handles

No.		Half Polished, Bronzed. Per dozen.	Full Polished. Per dozen
1	3¼ in. Cut	$8.00	$10.00
2	3½ " "	8.50	10.50
3	3¾ " "	9.00	11.00

BEATTY, SOLID STEEL

Painted Blue, Polished Eye White Hickory Handles.

No.		Per dozen.
221	Size 1, 3¼ inch Cut	$8.50
222	" 2, 3½ " "	9.00
223	" 3, 3¾ " "	9.50
224	" 4, 4⅛ " "	10.00

GERMANTOWN, OLIVE BRONZED

Forged from one piece of Solid Steel, Hickory Handles.

No.		Per dozen
336	Size 1, 3¼ inch Cut	$10 50
338	" 2, 3½ " "	11.00
340	" 3, 3¾ " "	11.50

GERMANTOWN, FIRE BRONZED

Octagon Neck, Round Pole. Forged from one piece of Solid Steel. Hickory Handles.

No.		Per dozen.
317½	Size 1, 3¼ inch Cut	$13.50
318	" 2, 3½ " "	14.00
318½	" 3, 3¾ " "	14.50

GERMANTOWN, FULL POLISHED

Bel. Face, Adze Eye, Thin Bit, Forged from one piece of Solid Steel, Hickory Handles

No.		Per dozen
316	Size 2, 3½ inch Cut	$15.00

Half dozen in a Box

RAILROAD LANTERNS

"Fort Pitt"

FIG. 4172.

"Bestovall"

FIG. 4173.

"Monarch"

FIG. 4174.

Description	Per Dozen
"Fort Pitt" wire bottom, double guard, outside wick raiser	$10 00
"Bestovall" flat retinned steel braces, double guard, outside wick raiser	12 00
"Monarch" tin bottom, single guard	16 00

Above furnished with kerosene burners on request

No. 7—Government Pattern

FIG. 4175.

No. 7. Government pattern, lake and river, sperm oil, tin lantern, hinge top, furnished for kerosene oil when desired, price per dozen.....$15.00

Perfect Dash

FIG. 4175A.

"PERFECT DASH"

Description	Per Dozen
No. 1, two-pieced stamped tubes, No. 1 burner, ⅝ inch wick, No. 0 plain globe, side lift	$12.50
No. 2, two-pieced stamped tubes, No. 2 burner, ¾ inch wick, No. 0 bull's eye globe, finished in blue Japan, side lift	13.50

LANTERNS

No. 0—Clipper Lift

FIG. 4176.

No. 0—Side Spring Safety

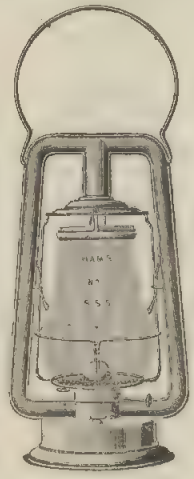


FIG. 4177.

No. 3—Cold Blast

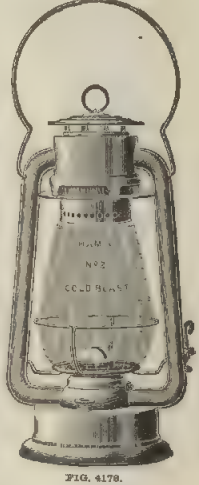


FIG. 4178.

No. 39.—Brass, Cold Blast

FIG. 4179.

No. 0. Clipper Lift, Two Piece, Tin Tubular Lantern. Has No. 1 Burner, 5/8-inch A Wick, No. 0 Globe, Locked Burner. Packed 1 dozen and 1/2 dozen in case.
Price.....per dozen $9.50

No. 0. Side Spring Safety, Two Piece, Tin Tubular Lantern. No. 1 Burner, 5/8 inch A Wick, No. 0 Globe. New inside Guard and Securely Locked Burner. Packed 1/2 dozen and 1 dozen to case.
Price.....per dozen 9.50

No. 2. Two Piece, Tube, Cold Blast, Clipper Lift, Tin Tubular Lantern. Has No. 2 Cold Blast Burner, 1-inch "B" Wick, No. 0 Cold Blast Globe. Packed 1/2 dozen to case. Price.....per dozen 16.00

No. 39. Brass, Cold Blast, Round Tube, Tubular Lantern. Has Gem Cold Blast Burner. 5/8-inch A Wick, No. 39 Cold Blast Globe. Very serviceable Lantern. Packed 1/2 dozen to case.
Price.....per dozen 44.00

HANCOCK LOCOMOTIVE INSPIRATOR.

TYPE C.

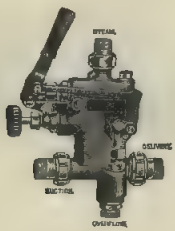


FIG. 905.

The manufacture of the first "Hancock Inspirator" to control with one lever both the lifter and forcer tubes involved a somewhat complicated mechanism, but types "A" and "C" inspirators are as simple in construction and operation as a single-tube injector.

Type "C" is made in the upright and type "A" in the horizontal pattern, both being identical in construction and efficiency and corresponding sizes having the same capacities. Each and every corresponding part of both types is interchangeable with the exception of the body (shaped for different pipe connections) and the connecting rod and overflow crank.

Single-tube injectors have an "open" overflow, and when the steam pressure varies, waste the water. These inspirators have a "closed" overflow, and cannot waste the water.

Single-tube injectors will not work with low steam pressure, and require adjustment for varying steam pressures. These inspirators will work with steam pressures of from 25 to 200 lbs. and higher, without any adjustment of either steam or water supply.

Other injectors in use will not, as a rule, work water at a temperature in excess of 90° or 95° Fahr. under high steam pressures, and if the injector and suction pipe are hot it is necessary to cool them both with cold water before the injector will work.

Sizes.	Type.	Prices. Types A and C.	PIPE CONNECTIONS. Steam.	Suction.	Delivery.	Overflow.	CAPACITIES PER HOUR. With 60 Lbs Steam Pressure.	With 100 Lbs. Steam Pressure.	HORSE POWER. For the Ordinary Type of Boiler and Engine.	On a Basis of 30 Lbs. Evaporation per H. P. per Hour.
10	C	$20 00	¾	¾	¾	¾	120 guls.	185 guls.	8 to 15	12 to 20
12½	C	25 00	¾	¾	¾	¾	220 "	245 "	15 " 30	20 40
15	C	30.00	¾	¾	¾	¾	300 "	340 "	30 " 45	40 ' 55
17½	C	40.00	¾	1	1	1	420 "	475 "	45 " 65	55 ' 80
20	C	45.00	¾	1	1	1	540 "	610 "	65 " 80	80 ' 110
25	A	60.00	1¼	1¼	1¼	1¼	900 "	1020 "	80 " 130	110 ' 180
30	A	75 00	1½	1½	1½	1½	1260 "	1430 "	130 " 170	180 " 235
35	A	90.00	1½	1½	1½	1½	1740 "	1975 "	170 " 230	235 " 300
40	A	110.00	2	2	2	1½	2250 "	2550 "	230 " 300	300 " 400
45	A	125 00	2	2	2	1½	2820 "	3200 "	300 " 375	400 " 500
50	A	150 00	2	2½	2	1½	3480 "	3950 "	375 " 500	500 ' 650
65	A	200.00	2	2½	2	1½	3850 "	4140 "	500 " 600	650 " 750

THE HANCOCK INSPIRATOR

"STATIONARY" TYPE

FOR STATIONARY, MARINE AND PORTABLE BOILERS

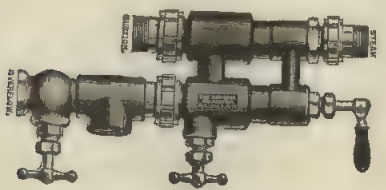


FIG. 906.

Adapted for a wider range of service than any other known device.

Operated by three handles, but simpler in construction, more efficient, durable and economical than any other injector.

Will lift water 25 feet or take it under a head.

No adjustment of either steam or water supply for varying steam pressures.

Will deliver the water at either high or low temperature, as desired.

Guaranteed to be the most efficient apparatus for universal service now in use.

Size	Prices "Stationary" Type	PIPE CONNECTIONS			Capacity Per Hour with 80 lbs. Steam Pressure	HORSE POWER	
		Steam	Suction and Delivery	Overflow		For the Ordinary Type of Boiler and Engine	On a Basis of 30 lbs. Evaporation Per H. P. Per Hour
7½	16.00	⅜	⅜	¼	60 Gals.	4 to 6	5 to 8
8½	18.00	⅜	⅜	⅜	90 "	6 to 8	8 to 15
10	20.00	⅜	½	⅜	120 "	8 to 15	15 to 25
12½	25.00	½	½	½	220 "	15 to 30	25 to 35
15	30.00	½	½	½	300 "	30 to 40	35 to 60
17½	40.00	½	¾	½	420 "	40 to 60	60 to 75
20	45.00	¾	1	¾	540 "	60 to 75	75 to 100
22½	55.00	1	1¼	1	720 "	75 to 90	100 to 130
25	60.00	1	1¼	1	900 "	90 to 120	130 to 175
30	75.00	1¼	1½	1¼	1260 "	120 to 165	175 to 235
35	90.00	1¼	1½	1¼	1710 "	165 to 230	235 to 300
40	110.00	1½	2	1½	2220 "	230 to 300	300 to 400
45	125.00	1½	2	1½	2820 "	300 to 375	400 to 500
50	150.00	2	2½	2	3480 "	375 to 500	500 to 650
55	175.00	2	2½	2	3850 "	500 to 600	650 to 700

Extra Quality Silver and Nickel Plated Call Bells.

Hand, Electric, Rotary and Push Bells
Illustrations are About One-Half Size.
Manufactured by Meriden Britania Co.
PRICES EACH

Silver Plated, White Marble Base
No. 3234 Each $1.[illegible]

Nickel Plated, Bronze Base
No. 3235 Each $1.20

Nickel Plated, Bronze Base.
No. 3236 Each..... $1.85

Silver Plated, White Marble Base
No. 3237 Extra large, hotel size .$3.35
No. 3238 Same style, hotel medium . 5.85

Silver Plated, Gold Base.
No. 3239 Each $1.70

Electric Strike, all Silver Plated
No. 3240 Each $4.00

Electric Strike, Silver Plated bell Gold Base
No. 3241 Each $4.45

Gut Bell, Bronze Base.
No. 3242 Each..... $1.00

Nickel Plate
No. 3243 Each . $0.[illegible]

Silver Plated
No. 3244 Each $0.[illegible]

Nickel Plated, Bronze Base
No. 3245 Each . . $1.20

Nickel Plated Bronze Base
No. 3246 Each $1.10

Silver Plated.
No. 3247 Each . . . $3.35

Silver Plated.
No. 3248 Each... ...$1.50

Silver Plated
No. 3249 Each. . . . $2.35

Silver Plated.
No. 3250 Each $1.35

Silver Plated
No. 3251 Each $2.35

Have You Read the 1911

Haynes Specifications?

You are familiar with many Haynes features. Do you know that it is generally agreed among makers of high-grade cars that the CAR OF THE FUTURE will be IN SIZE just like the Model 20 Haynes? The Haynes has the same room, class, comfort, style, that your customer will ask for three years from now.

MODEL 20 HAYNES, $2000

Read These Specifications

FRAME—Cold rolled pressed steel, 2-inch drop, 3-inch offset.

WHEEL-BASE—114 inches.

MOTOR—4¼-inch bore, 5 inch stroke, T-head cylinders cast in pairs, 2½ inch valves, ¾-inch offset; 35-40 H. P.; 4-point suspension.

IGNITION—Bosch-Dual Magneto, with battery, coil under hood.

CARBURETOR — Schebler Model "L," 1¾-inch.

LUBRICATION—Splash and force feed, oil reservoir in bottom part of crank-case and is filled through bleeder pipe on top of crank-case.

CONTROL—Stationary quadrant at top of steering post; short lever for spark, long for throttle, also foot accelerator.

STEERING COLUMN—Worm-and-gear type, adjustable; 17-inch aluminum spider; wood-filled wheel.

CLUTCH—Haynes contracting steel band on bronze drum, supported by crank shaft. Easily adjusted and lubricated.

TRANSMISSION — Selective type, three speeds forward, one reverse, Timken roller bearings. Operated through H-slotted bracket. Supported from two rear arms of engine base.

PROPELLER SHAFT—Forged. Two universal joints, housed and packed with hard oil.

REAR AXLE—Timken full floating type, pressed steel housing supporting weight of car. 1⅞-inch shaft.

FRONT AXLE—Single piece I-beam, 2-inch drop forged spring seat forged integral. Spindles, 1⅛-inch diameter; Timken roller bearings.

WHEELS—Artillery type, wood 12 heavy spokes front and rear March Q. D. Rims; Timken roller bearings, both front and rear.

TIRES—Quick detachable, 34-inch by 4-inch, front and rear.

SPRINGS—Front semi-elliptic, 39 inches long, 2 inches wide, 6 leaves. Rear, ¾ elliptic, 41½ inches long, 2 inches wide, 6 leaves. Grease cups front and rear.

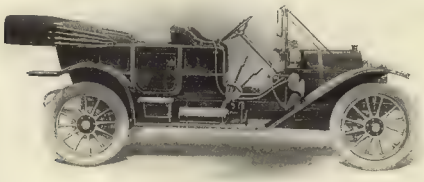
BRAKES—Internal and external on rear wheels. Drum, 13-inch diameter by 2-inch face. Disappearing foot pedal operates external service brake, and lever at right side of front seat the internal emergency brake.

BODY—3-ply laminated poplar. Handbuffed black leather spring backs to both seats, filled with super-extra gray hair Five passenger "Tourist." Four passenger "Suburban" with doors in front, Two-passenger "Hiker" with doors in front.

EQUIPMENT—Top, top cover, glass front, two Gray & Davis gas lamps, three oil lamps Type B Prest-O-Lite Tank. Warner Auto-Meter, coat and foot rails, tire irons, full equipment of tools etc.

PRICE—$2000, fully equipped.

Licensed under Selden Patent



$2000—FULLY EQUIPPED

Haynes Automobile Co., Station G KOKOMO, IND.

SPOONS & FORKS STAMPED
HOLMES & EDWARDS
ARE GUARANTEED FULL WEIGHT OF SILVER

Holmes & Edwards' High Grade Silver Plated Flatware

For Style, Finish and Durability this line has no superior.

This brand has been on the market for thirty years, and is reliable. Superior quality flatware plated 25 per cent more than full standard plate on 18 per cent nickel silver blanks. Prices per dozen.

WASHINGTON PATTERN

Tea Spoons

No.	Per doz
1861 XII Plate	$4 80
1862 Triple " ..	6 60

Dessert Spoons

1863 XII Plate	$ 8 61
1864 Triple " .	11.15

Table Spoons

1865 XII Plate	$ 9 60
1866 Triple " .	13 20

Dessert Forks

1867 XII Plate.	$ 8 61
1868 Triple " .	11 15

Medium Forks

1869 XII Plate	$ 9 60
1870 Triple " .	13.20

Sugar Shells

	Each
1871 XII Plate	.$0.76

Butter Knives

1872 XII Plate..	$0.89

ORIENT [illegible] PATTERN

Tea Spoons

No.	Per doz
1873 XII Plate	$4 80
1874 Triple " ..	6 60

Dessert Spoons

1875 XII Plate.	$ 8 61
1876 Triple " .	11.15

Table Spoons

1877 XII Plate	$ 9 60
1878 Triple " .	13 20

Dessert Forks

1879 XII Plate	$ 8 61
1880 Triple " .	11 15

Medium Forks

1881 XII Plate	$ 9 60
1882 Triple " .	13.20

Sugar Shells

	Each
1883 XII Plate	$0.76

Butter Knives

1884 XII Plate	$0.89

NASSAU PATTERN

Tea Spoons

No.	Per doz
1885 XII Plate .	$4 80
1886 Triple " ..	6 60

Dessert Spoons

18 7 XII Plate	$ 8 61
1888 Triple " .	11.15

Table Spoons

1889 XII Plate	$ 9 60
1890 Triple " .	13 20

[illegible]

1891 XII Plate	$ 8.61
1892 Triple " .	11.15

[illegible]

1893 XII Plate	$ 9.60
1894 Triple " .	13 20

Sugar Shells

	Each
1895 XII Plate	$0.76

Butter Knives

1896 XII Plate..	$0 89

PEARL [illegible]

Tea Spoons

No.	Per doz
1897 XII Plate	$4.80
1898 Triple " ..	6.60

Dessert Spoons

1899 XII Plate	$ 8.61
1900 Triple " .	11.15

Table Spoons

1901 XII Plate	$ 9 60
1902 Triple " .	13 20

Dessert Forks

1903 XII Plate	$ 8 61
1904 Triple " .	11.15

Medium Forks

1905 XII Plate	$ 9 60
1906 Triple " .	13 20

Sugar Shells

	Each
1907 XII Plate	.$0 76

Butter Knives

1908 XII Plate..	$0 89

SHELL PATTERN

Tea Spoons

No.	Per doz
1909 XII Plate	.$4.29
1910 Triple " ..	6 07

Dessert Spoons

1911 XII Plate	$ 7 60
1912 Triple " .	10.13

Table Spoons

1913 XII Plate	$ 8.58
1914 Triple " .	12.14

[illegible]

1915 XII Plate	$. 60
1916 Triple "	10.13

[illegible]

1917 XII Plate	$ 8 58
1918 Triple "	12.14

FANCY PIECES [illegible] IN SHELL PATTERN

TIPPED PATTERN

Tea Spoons

No.	Per doz
1919 XII Plate	.$4.29
1920 Triple " ..	6.07

Dessert Spoons

1921 XII Plate	$ 7 60
1922 Triple " .	10 13

Table Spoons

1923 XII Plate	$ 8 58
1924 Triple "	12 14

Dessert Forks

1925 XII Plate.	$ 7 60
1926 Triple " .	10.13

Medium Forks

1927 XII Plate	$ 8.58
1928 Triple "	12.14

FANCY PIECES NOT MADE IN TIPPED PATTERN

LA FAYETTE
FRENCH GRAY
PATTERN

SPOONS AND FORKS STAMPED

HOLMES & EDWARDS

STERLING INLAID

GUARANTEED 25 YEARS

Equal in weight to 12 coin Sterling. As durable as solid silver at one-third the cost.

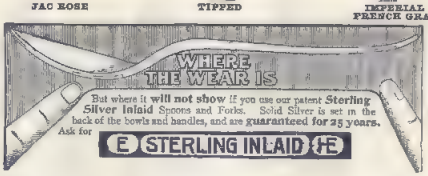
STERLING SILVER INLAID SPOONS AND FORKS as shown on this page are guaranteed until the year 1935. The manufacturers of these goods further agree to receive as half payment in exchange for new, such goods as show wear during the period from the year 1935 until the year 1940, if goods are otherwise in good order.

JAC ROSE

TIPPED

IMPERIAL
FRENCH GRAY

AMERICAN BEAUTY
ROSE
FRENCH GRAY
PATTERN


WHERE THE WEAR IS
But where it will not show if you use our patent Sterling Silver Inlaid Spoons and Forks. Solid Silver is set in the back of the bowls and handles, and are guaranteed for 25 years.
Ask for
E STERLING INLAID HE

Occasionally you have a customer who desires Sterling Silver Spoons and Forks, but who cannot afford to pay the retail price of same. This can be easily overcome if you handle Sterling Silver Inlaid quality. A piece of solid silver is inserted at the points exposed to wear, and then the article is extra triple-plated, making same fully as durable as solid silver. Each article is stamped sterling inlaid, and a written guarantee of twenty-five years is given with every dozen. Inlaid quality is classed with sterling silver and bears no relation whatever to sectional or triple plate.

The Sterling Inlaid Ware (spoons, forks, etc.) is an article that is far superior in many ways to sterling for daily use.

FIRST. It is less in cost.

SECOND. It will wear longer and look better unless the sterling are of very heavy weight.

THIRD. It being made of two metals it does not retain the heat as the solid does, which is a great advantage in tea and dessert spoons.

FOURTH. It has elasticity, which solid does not possess, so that in forks they keep their shape.

FIFTH. There are many other reasons why they are preferable to sterling for every day use, as for instance on account of robbery and disappointment of losing a gift or otherwise which may have been handed down as heirloom, etc.

LAFAYETTE		JAC ROSE Hand engraved.		TIPPED AND WINDSOR Same prices.		IMPERIAL		AMERICAN BEAUTY ROSE	
Spoons.		Spoons		Spoons		Spoons		Spoons	
No.	Dozen	No.	Dozen	No.	Dozen	No.	Dozen	No.	Dozen
1811 Tea	[illegible]	1831 Tea	[illegible]	1831 Tea	$10.00	1841 Tea	$10.00	1851 Tea	$10.00
1812 Dessert	[illegible]	1832 Dessert	[illegible]	1832 Dessert	[illegible]	1842 Dessert	12.00	1852 Dessert	12.00
1813 Table	[illegible]	1833 Table	21.00	1833 Table	20.00	1843 Table	20.00	1853 Table	20.00
1814 Coffee, silver bowl	9.00	1834 Coffee, silver bowl	11.50	1834 Coffee, silver bowl	9.00	1844 Coffee, silver bowl	9.00	1854 Coffee, silver bowl	9.00
1815 Coffee, gilt bowl	12.00	1835 Coffee, gilt bowl	14.50	1835 Coffee, gilt bowl	12.00	1845 Coffee, gilt bowl	12.00	1855 Coffee, gilt bowl	12.00
1816 Sugar, silver bowl	16.00	1836 Sugar, silver bowl	[illegible]	1836 Sugar, silver bowl	[illegible]	1846 Sugar, silver bowl	[illegible]	1856 Sugar, silver bowl	[illegible]
1817 Sugar, gilt bowl	20.00	1837 Sugar, gilt bowl	21.65	1837 Sugar, gilt bowl	20.00	1847 Sugar, gilt bowl	20.00	1857 Sugar, gilt bowl	20.00
Forks		Forks		Forks		Forks		Forks	
1818 Dessert	16.00	1838 Dessert	20.00	1838 Dessert	16.00	1848 Dessert	16.00	1858 Dessert	16.00
1819 Medium	20.00	1839 Medium	24.65	1839 Medium	20.00	1849 Medium	20.00	1859 Medium	20.00
Knives		Knives		Knives		Knives		Knives	
1820 Butter	16.65	1836 Butter	19.35	1840 Butter	16.65	1850 Butter	16.65	1860 Butter	16.65

THE HOWELLS ALL STEEL WORM MACHINE

FIG. 4653.

Price of this machine complete is ....$12.00.

Total weight of machine 50 pounds.

The Augers for this machine are made from the best high grade 60 Carbon Steel and have square hole in the end for the reception of the cutters, which can be had in a great many different styles.

This machine is made for drilling rock and is guaranteed to drill a perfectly straight hole.

THE HOWELL'S BALL BEARING PIPE RATCHET DRILL

FIG. 4654.

Price of complete machine with 6 or 10 Thread Feed Bar and one set of Augers comprising one 18 inch Auger, one 3 foot Auger and one 4½ foot Auger, and one Ratchet handle $24 00

This machine is especially designed to drill holes close to the top or bottom parallel to the line of working, also close to the sides or corners where it is not convenient to turn a crank.

For taking down top or bottom rock where the material is hard it has special advantages over other drills.

It is designed for hard usage and can be worked by two or more men if necessary.

The Ratchet Handle is reversible and can be turned backward or forward at will.

The Feed Nut is detachable and can be disengaged instantly without screwing the Feed Bar back. The feed can be made variable from six threads to the inch to any degree of fineness by the use of the Ball-bearing Feed. This machine is built for the hardest kind of work, having a Feed Bar 1⅞ inches diameter, with 6 or 10 threads to the inch, and also being built very strong in every part.

This machine can also be mounted on post, if desired.

THE "HOWELLS" No. 2 COMPRESSED AIR DRILL

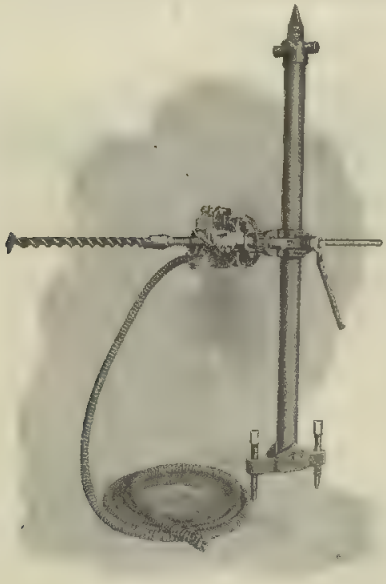


FIG. 4852.

This Machine is capable of drilling anything that an auger will penetrate, and bores coal at the rate of 7 feet per minute, and medium rocks at the rate of from 3 to 4 feet per minute.

The complete weight of this Drill, ready for shipment, including Post, Augers, etc., is 260 lbs.

This Machine consumes 36 cubic feet of free air per minute at a pressure of 60 lbs., and can be operated successfully with an air pressure of from 50 to 90 lbs. With 70 lbs. of pressure a 6-foot hole can be drilled in coal in one minute, and in rock, slate, shale, fire-clay, etc., from 3 to 4 feet per minute.

These Machines are the fastest, strongest and most durable Compressed Air Rotary Auger Drills manufactured, and are being used successfully in every country in the world.

The Machine is mounted in such a way that it will swing around the Column in any desired position.

We solicit inquiries for these Drills and are in a position to make prompt shipments.

Price of complete Machine, with Upright Post, Column or Cross Bar and one full set of Steel Augers ..... each, $200.00

Price of complete Machine mounted on Tripod, with full set of Steel Augers.. " 215.00

HARDSOCG'S ROCK RATCHET MACHINES FOR ROCK AND ALL HARD BORING

RATCHET ROCK MACHINE

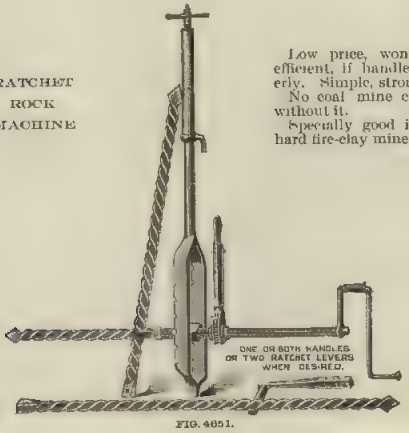


FIG. 4051.

Low price, wonderfully efficient, if handled properly. Simple, strong.

No coal mine complete without it.

Specially good in extra hard fire-clay mines.

Machine to drill 4 ft., having 2 and 4 ft. Augers..... $22.50
Same, with 1, 2, 3 and 4 ft. Augers..... 25.00
To drill 4½ ft., with 1½, 3 and 4½ ft. Augers..... 25.00
To drill 6 ft., with 2, 4 and 6 ft. Augers..... 26.00

Either 1¼ x ½ S, are Edge Augers or 1¼ x ½ Bevel Edge Augers of finest crucible tool steel possible to buy for the purpose.

Without Ratchet deduct from list..... $2.00
Any length Special Rock Augers, flat or bever; list.....per foot, 1.00

ROCK MACHINE REPAIRS

ORDER BY NUMBERS

55.	Thread Bar, 10 or 12 threads.....	$2.50
131C.	Boxing, 10 or 12 threads.....	1.15
101.	Jack Screw.....	.60
121.	Tail Screw.....	.20
	Rock Post, complete.....	7.50
4.	Special Boot.....	1.50
16.	Ring for Boot.....	.15
254.	Universal Ratchet.....	2.50
255.	Double Handle.....	1.50

THE HOWELLS TYPE A ELECTRIC DRILL

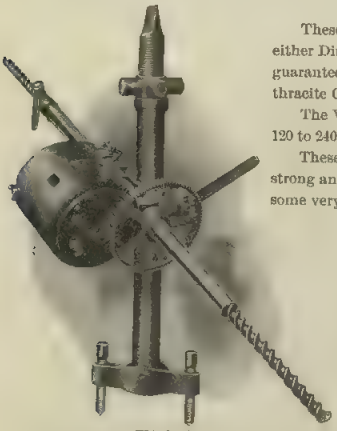


FIG 4648.

These Machines can be operated on either Direct or Alternating Current and are guaranteed to drill the hardest kind of Anthracite Coal at the rate of 7 feet per minute.

The Voltage of these Drills ranges from 120 to 240 volts.

These Electric Drills are very compact, strong and durable and are capable of drilling some very stiff rocks.

This Machine as shown above, without Post or Augers weighs 150 pounds.

We are in a position to make prompt shipments and solicit your inquires.

Machine complete with Upright Post, Cross Bar, Column or Tripod with set of Augers will cost $275.00.

THE HOWELLS HEAVY GEARED POST DRILLS

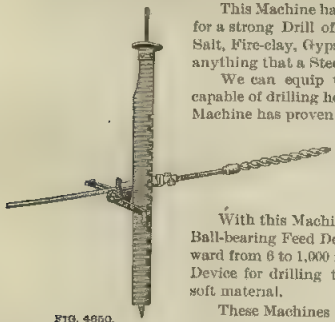


FIG. 4650.

This Machine has been designed to meet the demands for a strong Drill of the Auger Type for boring rock, Salt, Fire-clay, Gypsum, etc., and is capable of drilling anything that a Steel Auger will penetrate.

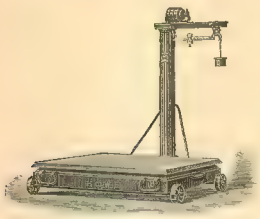
We can equip these Machines, if desired, Augers capable of drilling holes up to 100 feet in depth and this Machine has proven very valuable for drilling long holes for proving Coal or tapping Water or Gas in advance of the working. It is made heavy and strong to stand the power of two or four men turning the Cranks.

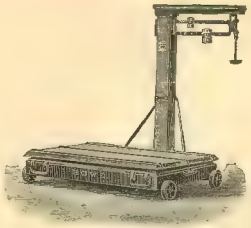
With this Machine we furnish the Howells Patent Ball-bearing Feed Device which will feed the Drill forward from 6 to 1,000 revolutions per inch, a very valuable Device for drilling through Stratum having hard and soft material.

These Machines are being used very extensively in nearly every country in the world and we take pleasure in recommending them to any person having rock work to do. They are invaluable for Tunnel Work, in fact, they are necessary in all up-to-date mines and no working is complete without them.

Price of complete Machine with full set of Steel Augers and Post up to 6 feet high $40.00. Total weight of Complete Machine with 6 foot Post, 175 lbs.

Howe Portable Scales





Wheelbarrow Scales.

Made entirely of metal. Beams graduated by ½ pounds to 100 pounds. For weighing barrows of coal or other substances. Furnished with a set of inclines at same prices.

With Wheels.

			Each
No. 142—1000 lbs	Platform, 43 x 30 in		$ 75 00
No. 144—1500 "	" 43 x 30 "		85 00
No. 1113—2000 "	" 44 x 35 "		100 00

Without Wheels.

			Each
No. 143—1000 lbs	Platform, 43 x 30 in.		$70 00
No. 145—1500 "	" 43 x 30 "		80 00
No. 1114—2000 "	" 44 x 35 "		93 00

Ice Scales.

With solid iron platform, provided with ribs to allow blocks of ice to slide over without obstruction. With double brass beam. No loose weights. Upper bar of beam graduated by 1 pound notches to 200 pounds, lower bar by 100 pound notches to 800 pounds. Steel dog in lower poise.

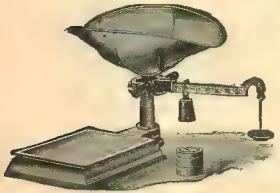
With Wheels.

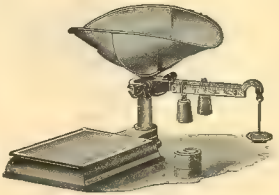
		Each
No. 150—1000 lbs.	Platform, 43 x 30 in	$85 00

Without Wheels.

		Each
No. 151—1000 lbs.	Platform, 43 x 30 in.....	$80 00

Bedford Union Scales





Single Beam.

Capacity, ½ oz. to 24 lbs.

		Each
No. 2200—With Forks.	Tin Scoop.....	$4.50
No. 2204— " "	Brass "	5.50
No. 2270—With Round Plate.	Tin Scoop....	5.50
No. 2274— " " "	Brass "	6 50

Double Beam.

Capacity, ½ oz. to 240 lbs.

		Each
No. 2202—With Forks	Tin Scoop.....	$5 50
No. 2206— " "	Brass "	6 50
No. 2272—With Round Plate.	Tin Scoop	6 50
No. 2276— " " "	Brass "	7 50

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Howe Portable Scales

New Crown Beam Scales.

With Wheels.

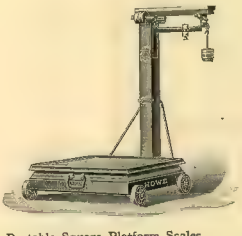
Beam on top of cap at height to allow the weigher to stand upright. The pillar, cap and wood panel of the platform are of birch and finished in the natural wood. Pillars are braced.

With Single Beam.

			Each.
No. 1118—800 lbs	Platform,	17 x 24 in.....	$38.00
No. 1122—600 "	"	16 x 24 "	33.00
No. 1126—400 "	"	15 x 22 "	26 00

With Double Beam.

			Each.
No. 1120—800 lbs.	Platform,	17 x 24 in..	$42.00
No. 1124—600 "	"	16 x 24 " .	37 00
No. 1128 400	"	15 x 22 " .	30 00



Portable Square Platform Scales.

With Panel Platform.

			Each.
No. 848—1500 lbs.	Platform,	30 x 30 in .	$60.00
No. 850—1200 "	"	28 x 28 "	53.00
No. 852—1000 "	"	26 x 26 "	45.00
No. 854— 800 "	"	25 x 25 "	40.00
No. 856— 600 "	"	24 x 24 "	35.00

With Drop Lever.

			Each.
No. 864—1500 lbs.	Platform,	30 x 30 in . .	$74 00
No. 866—1200 "	"	28 x 28 "	63.00
No. 868—1000 "	"	26 x 26 "	53.00

Salt Meat and Fish Scales.

With Solid Iron Platform.

			Plain. Each.	Galv. Each.
No. 52—1200 lbs	Platform,	19 x 28 in	$53.00	$73.00
No. 54—1000 "	"	17 x 26 "	47.00	65.00
No. 56— 800 "	"	17 x 24 "	40.00	52.00
No. 58— 600 "	"	16 x 24 "	35.00	47.00
No. 58— 400 "	"	15 x 22 "	28.00	40.00

With Drop Lever.

			Plain. Each.	Galv Each.
No. 72—1200 lbs.	Platform,	19 x 28 in	$61.00	$83 00
No. 74—1000 "	"	17 x 26 "	54.00	71.00
No. 71— 800 "	"	17 x 24 "	47.00	61.00
No. 73— 600 "	"	16 x 24 "	42.00	55.00
No. 75— 400 "	"	15 x 22 "	36 00	48.00

DOUBLE BIT AXES

A. A & T. CO.

Fig. 8677A

No. 505

Fig. 8677B

HUBBARD

Fig. 8677C

Price, A. A. & T. Co., Mann's Wisconsin Pattern, Damascus Finish, weights, 3½ to 4½ lbs.	per dozen	18 00
Price, Robert Mann's No. 505, Mann's Wisconsin Pattern, Blued and Labeled Finish, weights, 3½ to 4½ lbs	"	15.00
Price, Hubbard Full Concave, Michigan Pattern, Silver Bronze Finish, weights, 3½ to 4½ lbs	"	15 00

GLADSTONE

Fig. 8677D

NORTHERN

Fig. 8677E

OSCEOLA RIDGE

Fig 8677F

Price, Gladstone, Michigan Pattern, Natural Black Finish, weights 3½ to 4¼ lbs.	per dozen	15 00
Price, Northern Michigan Pattern, Gold Bronze Finish, weights, 3½ to 4¼ lbs	"	13 00
Price, Osceola Ridge, Michigan Pattern, Hand Made Finish, weights, 3½ to 4½ lbs	"	12 00

HANDLED AND HATCHET AXES

DUQUESNE

Fig. 8678A

NIAGARA

Fig. 8678B

LIPPINCOTT BOYS'

Fig. 8678C

HANDLED AXES

Price Duquesne, Michigan Pattern, Ebony Finish, Ebony Handle, weights, 3 to 4 lbs.	per dozen	12.00
" Niagara, Michigan Pattern, Painted Head, Blue Bevels, Polished Bit, Ebony Handle, weights 3½ to 4 lbs.	"	10.00

BOYS' HANDLED AXES

Price, No. 1 Duquesne, Ebony Finish, Ebony Handle	per dozen	9.00
" " 2 " " " "	"	10.00
" " 2 Lippincott Phantom Bevel, Polished and Labeled, with Blue Bevels and No. 1 White Handle		12.00

FIREMAN'S

Fig. 8678D

CHICAGO ICE AXE

Fig. 8678E

SPORTSMAN'S

Fig. 8678F

FIREMEN'S AND ICE AXES

Price, Lippincott's Fireman's Hatchet Axes, Gold Bronze Finish, Red Handles	per dozen	30.00
" Underhill's Chicago Pattern Ice Axes, Red Finish	"	26.00

HUNTERS' AND SPORTSMEN'S HATCHET AXES

Price No. 1 Hartshorn Sportsmen's Hatchet Axes, Hand Forge Finish, Hickory Handles	per dozen	9.00
" No. 1 Duquesne Hunters' Hatchets	"	7.50
" No. 2 " " "	"	8.50

SINGLE BIT AXES

A. A. & T. CO.

Fig. 8766A

No. 505

Fig. 8766B

HUBBARD

Fig. 8766C

Price, A. A. & T. Co., Michigan Pattern, Bronze Finish, fully warranted, weights, 3½ to 4½ lbs. and 4 to 5 lbs. ..... per dozen 15.00
Price, Robbins, No. 505 Michigan Pattern, Blued and Lacquered Finish, weights, 3½ to 4½ lbs. ..... " 12.00
Price, Hubbard's Full Concave, Michigan Pattern, Silver Bronze Finish, weights, 3½ to 4½ lbs. ..... " 12.00

GLADSTONE

Fig. 8766D

NORTHERN

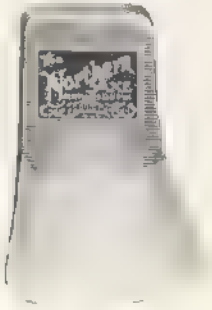


Fig. 8766E

DUQUESNE

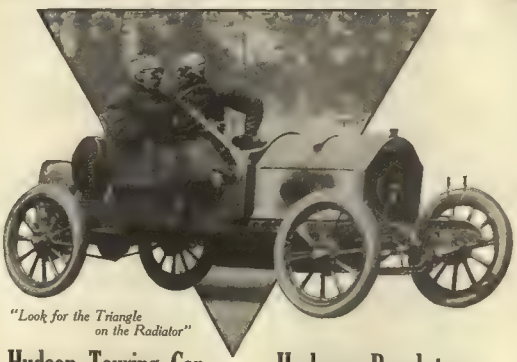
Fig. 8766F

Price, Gladstone, Michigan Pattern, Natural Black Finish, weights 3½ to 4½ lbs. ..... per dozen 12.00
Price, Northern, Michigan Pattern, Gun Barrel Finish, weights, 3½ to 4½ lbs. ..... " 10.00
Price, Duquesne, Michigan Pattern, Forged Tool Steel, Ebony Finish, weights, 3 to 4 lbs. ..... " 9.00

Fig. 8766G

BROAD AXES

Weights ..... pounds 6 to 7 7 to 8
Price, Simmons' Champion, Baker Pattern, Gun Metal Finish ..... per dozen 14.00 17.00
Price, Crippen Brand, Baker Pattern ..... " 30.00 .



"Look for the Triangle on the Radiator"

Hudson Touring Car $1150

Hudson Roadster $1000

Speed is an important factor in a motor car. Important because it indicates power.

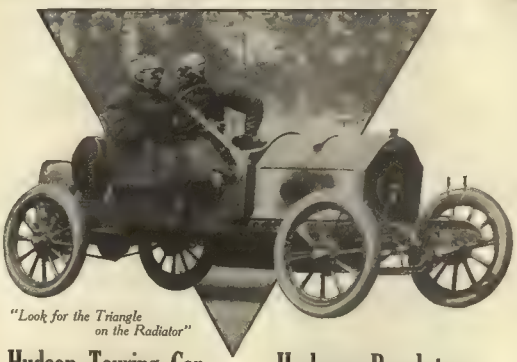
Although you may never require excessive speed, it is a lot of satisfaction to know that you have the power to develop it. That same power you will find necessary on hilly, muddy or sandy roads.

The Hudson will travel any road that any other automobile will travel of whatever horse-power.

Too much power is a useless weight and useless expense. You would not use four horses to pull a buggy if two would do the work as well. The right amount of power consistent with low cost of operation is what you get in a Hudson. Hudson power was carefully worked out in proportion to Hudson weight. It is ample for every emergency.

Hudson Motor Car Company, Detroit, Mich.

Licensed Under Selden Patent



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Hudson Motor Car Company, Detroit, Mich.

Licensed Under Selden Patent

MINERS' AXES

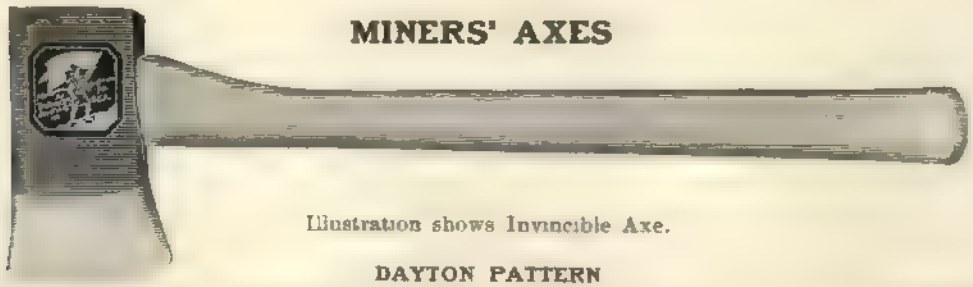


Illustration shows Invincible Axe.

DAYTON PATTERN

Union Chopper, Handled, Black Finish, 3 to 4 lbs.		Per dozen $8.00
" " " " " 3½ to 4½ "		" " 8.50
" " " " " 4 to 5 "		" " 9.00

Half dozen in a Box.

Invincible, Handled, Red Polished Bit, 3 to 4 lbs.		Per dozen $10.00
" " " " " 3½ to 4½ "		" " 10.50
" " " " " 4 to 5 "		" " 11.00

One dozen in a Box.

HANDLED BOYS' AXES

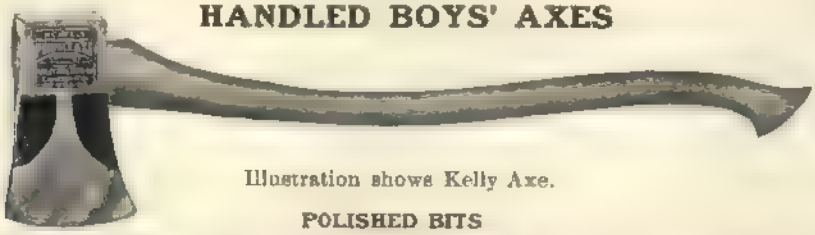


Illustration shows Kelly Axe.

POLISHED BITS

Russell	No.	2,	Cast Steel,	Bronze Finished,	Hickory Handles,	28 inches.	One doz. in a Box.	Per doz. $
Red Ridge	"	2,	"	"	Red Finish	"	"	28	"	"	"	"	"	"	"	"	"	"	"
Falls City	"	2,	"	"	"	"	Bued Bevel,	Excelsior	Handles,	28 in.	Half doz. in a Box	"	"	"
Kelly	"	2,	"	"	Full Polished	"	"	Extra	"	28	"	"	"	"	"	"	"	"	"

HUNTERS' AXES

LITTLE GIANT NO 1, CAST STEEL
Black Charcoal Finish.
Weight, 1⅝ lbs. Hickory Handles, 15 inches.
Per dozen $8.00
Half dozen in a Box.

HAMMOND NO. 00
Forged Swedish Iron, Tool Steel Edge, Half Polished, Bronze Finish, Extra White Hickory Curved Handles.
No. 160 3½ in. Cut, Weight, 1¾ lbs. Per doz. $12.30
Half dozen in a Box.

STANDARD AXE LIST

3 1-2 LB. GROUP

Base price as quoted.
All 2 lb. or 2¼ or 2½ or 2¾ or 3 or 3¼ or 3½ lbs. or assorted.

2 to 2¼
2 to 2½
2 to 2¾
2 to 3
2 to 3¼
2 to 3½

2¼ to 2½
2¼ to 2¾
2¼ to 3
2¼ to 3¼
2¼ to 3½
2½ to 2¾
2½ to 3
2½ to 3¼
2½ to 3½

2¾ to 3
2¾ to 3¼
2¾ to 3½
2¾ to 3¾
2¾ to 4
3 to 3¼
3 to 3½
3 to 3¾
3 to 4

3¼ to 3½
3¼ to 3¾

Total weight per dozen not over 42 lbs.
No axe over 4 lbs.

4 LB. GROUP

25c extra above base.
All 3¾ lbs. or 4 lbs. or assorted.

3 to 4¼
3 to 4½
3¼ to 4
3¼ to 4¼

3¼ to 4½
3½ to 3¾
3½ to 4

3½ to 4¼
3½ to 4½

3¾ to 4
3¾ to 4¼

Total weight per dozen not over 48 lbs.
No axe over 4¼ lbs.

4 1-2 LB. GROUP

50c extra above base.
All 4¼ lbs. or 4½ lbs. or assorted.

3½ to 4¾
3¾ to 5

3¾ to 4½
3¾ to 4¾

3¾ to 5
4 to 4¼
4 to 4½
4 to 4¾
4 to 5

4¼ to 4½
4¼ to 4¾

Total weight per dozen not over 54 lbs
No axe over 5 lbs.

5 LB. GROUP

75c extra above base.
All 4¾ lbs. or 5 lbs. or assorted.

4 to 5¼
4 to 5½
4 to 5¾
4 to 6
4¼ to 5
4¼ to 5¼
4¼ to 5½
4¼ to 5¾
4¼ to 6
4½ to 4¾
4½ to 5
4½ to 5¼
4½ to 5½

4¾ to 5¾
4½ to 6

4¾ to 6
4¾ to 5¼

Total weight per dozen not over 60 lbs.
No axe over 6 lbs

5 1-2 LB. GROUP

$1.00 extra above base.
All 5¼ lbs. or 5½ lbs. or assorted.

4¾ to 5½
4¾ to 5¾
4¾ to 6
5 to 5¼
5 to 5½
5 to 5¾
5 to 6

5¼ to 5½
5¼ to 5¾

Total weight per dozen not over 66 lbs.
No axe over 6 lbs.

6 LB. GROUP

$1.25 extra above base.
All 5¾ lbs or 6 lbs. or assorted

5¼ to 6
5¼ to 6¼
5¼ to 6½
5½ to 5¾
5½ to 6
5½ to 6¼
5½ to 6½

5¾ to 6
5¾ to 6¼

Total weight per dozen not over 72 lbs.
No axe over 6¼ lbs.

6 1-2 LB. GROUP

$1.75 extra above base.
All 6¼ lbs. or 6½ lbs. or assorted.

5¾ to 6½
5¾ to 6¾
5¾ to 7
6 to 6¼
6 to 6½
6 to 6¾
6 to 7

6¼ to 6½
6¼ to 6¾

Total weight per dozen not over 78 lbs.
No axe over 7 lbs.

7 LB. GROUP

$2.25 extra above base.
All 6¾ lbs. or 7 lbs. or assorted.

6¼ to 7
6¼ to 7¼
6¼ to 7½
6½ to 6¾
6½ to 7
6½ to 7¼
6½ to 7½
6¾ to 7
6¾ to 7¼

Total weight per dozen not over 84 lbs.
No axe over 7¼ lbs.

7 1-2 LB. GROUP

$2.75 extra above base.
All 7¼ lbs. or 7½ lbs. or assorted.

6¾ to 7½
6¾ to 7¾
6¾ to 8
7 to 7¼
7 to 7½
7 to 7¾
7 to 8

Total weight per dozen not over 90 lbs.
No axe over 8 lbs

8 LB. GROUP

$3.25 extra above base.
All 7¾ lbs. or 8 lbs.

HATCHETS

CLAW

Fig. 8701A

SHINGLING

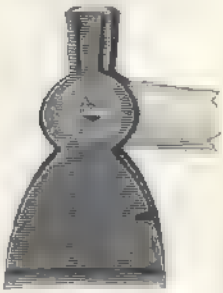


Fig. 8701B

BROAD

Fig. 8701C

"HUNT'S," GUN METAL FINISH

Size	..number	1	2	3	4	5
Price, Claw	per dozen	11.50	12 00	12 50		
" Shingling	"	10.50	11 00	11 50		
" Bench or Broad Western Pattern, Single Bevel	"		11 50	13 00	14 50	16 50

Hunt's Hatchets are hand forged by a special continuous process which saves several heatings and thoroughly refines the steel. The gun metal finish will not rust, scratch, crack or peel. The tapering box eye has an extra wedging space and gives practically the same support to the handle as an adze eye tool. Handles are securely fastened with steel wedges.

LATH

Fig. 8701D

CLAW

Fig. 8701E

SHINGLING

Fig. 8701F

BROAD

Fig. 8701G

DUQUESNE, PAINTED POLL, POLISHED BIT

Size ....number	1	2	3	4	5
Price, Lath per dozen	10.50	11 00			
" Claw "	11.50	12 00	12 50		
" Shingling "	10.50	11 00	11 50		
" Bench or Broad Western Pattern, Single Bevel	....	....	....	....	....
	....	11.50	13 00	14 50	16.50

Duquesne Hatchets are forged from tool steel, have the same outline and box eye features of Hunt's gun metal tools, have properly hardened polls and a hand hammered, carefully tempered cutting edge. Black painted polls and bodies, polished blades.

HATCHETS, ADZES, ETC.

LATH AND BARRELING HATCHETS

No. 30 BELL POLL LATH

Fig. 8679A

No. 40 LATH 81 POINTS

Fig. 8679B

No. 50 LATH 100 POINTS

Fig. 8679C

HURD'S PATTERN BARRELING

Fig. 8679D

Size.....number	30	40	50	1	2
Price, Genuine Underhill Started and Finished.....per doz.	16.00	16.50	17.50		
" No. 1 Hurd's Barreling, Gun Metal Finish...				8.00	8.50

ADZES

CARPENTERS' HALF HEAD

Fig. 8679E

RAILROAD FULL HEAD

Fig. 8679F

SHIP CARPENTERS'

Fig. 8679G

Price, Hurd's Razor Blade Carpenters' Adzes, Half Head, Young America Pattern, cut 4½ to 4¾ inches.....per dozen		24.00
" Boos's Champion Railroad Adzes, Full Head, Grain Metal Finish, cut 5 to 5½ inches.....	"	26.00
" Hurd's Ship Carpenters' Adzes, Pin, Eye to Lip, Black Finish, cut 4½ inches.....	"	25.00

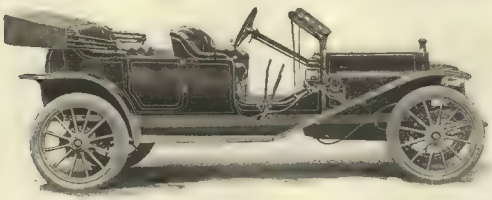
Fig. 8679H

MALLEABLE IRON AXE WEDGES

Price Assorted, 3 sizes in a Box.....per dozen		.50

1 dozen in box, 4 of each size

You can now verify this touring car value with your own eyes



20 H. P., 4 cylinders, 4 passenger, sliding gears, Bosch magneto **$900** F. O. B. Detroit, including the following standard equipment Gas lamps, piping and generator; 31 x 3½" rear tires, shock absorbers on front springs, three oil lamps, horn and tools Top, windshield and speedometer extra

Hupmobile

Guaranteed for life

In our initial announcement of this new Hupmobile Touring Car, we said of it "Never before such a car at such a price with such a guarantee."

Deliveries are being made, as this advertisement appears, to all parts of America.

When you go to your own dealer in your own town, you will find yourself in immediate and enthusiastic agreement with this claim.

The new $900 Hupmobile is the first touring car of 110-inch wheelbase to be sold for $900.

It is the first touring car with sliding gear transmission and Bosch magneto to be sold for less than $1000

It is the first touring car ever sold at any price with a lifelong guarantee

This guarantee means that the Hupp Motor Car Company guarantees the Hupmobile free from defects in material or workmanship during the life of the car, and will replace, free of charge, any such defective material, on return to its factory for inspection.

So you have in the Hupmobile Touring Car not only the most remarkable car in proof of size, power, equipment and luxury ever offered at such a price but a guarantee which establishes the quality of the car, beyond all possibility of argument.

Back of this you have the assurance based on the experience of Thousands of Hupmobile owners that the new $900 touring car will cost a little or no more than the car not actually be considered an expense, in view of the service rendered.

Accepting the experience of Hupmobile owners as a criterion, this new $900 touring car will cost the owner who keeps it at home about 1c or 2c a day

Now, congratulate all the advantages offered above, and see if you don't agree with us that there was "never before such a car at such a price;" with such a guarantee."

Then confirm this conviction with a personal examination of the car by a visit to your dealer.

HUPP MOTOR CAR COMPANY, Dept. A., DETROIT, MICHIGAN

LICENSED UNDER SELDEN PATENT

HUPMOBILE RUNABOUT

$750 F. O. B. Detroit, including 3 oil lamps, tool and horn. Top, gas lamps, tank or generator, speedometer and trunk rack extra

HUPMOBILE COUPE

$1100. F. O. B. Detroit. Equipment includes magneto, electric headlights, and interior overhead light; combination oil and electric dash and tail lamps; batteries and wiring; shock absorbers on front springs; single drop seat from dash; 31 x 4½ inch rear tires.

MINER'S LAMPS AND CANDLES

No. 2 PLAIN

Fig 8848A

No. 2 COMPLETE WITH STICK

Fig 8848B

HUSSON'S SOLID OIL MINER'S LAMPS

Price, No. 2, with Flat Retinue Hook, or Double Wire Hooks	...per gross	38 00
" " 2, " Detachable Stick	"	72 00
" " 6, Plain, Solid Oil with Flat Retinued Hook	"	38 00

No. 4 HUSSON'S MINER'S CANDLE STICKS

Fig 8848C

Price ...per dozen 1 50

MINER'S CANDLES

Brand	Full Light		Grande	
Size	Eights	Sixes	Eights	Sixes
Weight per Case ...pounds	12	35	40	35
" " Set ...ounces	16	14	16	14
Number Candles per Case	399	240	320	240
Price ...per pound				

Hydraulic Jacks

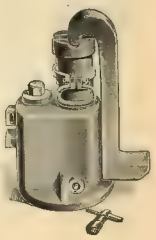
The increased area of the base in this style Jack gives it a solid foundation for use where steadiness is required. Will run out horizontally about their entire lift, and entire rise may be attained by slightly raising head to keep pump submerged

Capacity.			Rise.	Height When Down.	Diameter of Base.	Weight.	Each.
4 tons.			12 inches.	24 inches.	9½ inches.	70 lbs.	$ 62 00
7 "			12 "	25 "	10 "	88 "	68 00
7 "			18 "	31½ "	10 "	100 "	74.00
7 "			24 "	37½ "	10 "	110 "	80 00
10 "			12 "	25½ "	10 "	120 "	76 00
10 "			18 "	31½ "	12 "	130 "	88.00
10 "			24 "	37¾ "	12 "	150 "	100.00
15 "			12 "	25½ "	12 "	150 "	100.00
15 "			18 "	31⅜ "	12 "	162 "	116.00
15 "			24 "	38 "	12 "	185 "	132 00
20 "			12 "	26½ "	13 "	190 "	124 00
20 "			18 "	32½ "	13 "	210 "	144.00
20 "			24 "	38½ "	13 "	231 "	164 00
30 "			9 "	23 "	13½ "	215 "	152.00
30 "			12 "	26½ "	13½ "	225 "	162.00
30 "			18 "	32½ "	13½ "	250 "	190 00
40 "		All Steel	12 "	26½ "	13¾ "	260 "	200 00
40 "		All Steel	18 "	33 "	13¾ "	300 "	230.00
50 "		All Steel	12 "	28 "	15 "	320 "	240 00
50 "		All Steel	18 "	34½ "	15 "	365 "	270.00

Horizontal or Low Hydraulic Jacks

So called as they will run out as far horizontally as vertically and the heights are about 5 inches less than the regular styles. When desired, a wrought iron claw can be used for raising loads that are close to the ground.

Capacity.	Rise	Height When Down.	Diameter of Base.	Weight.	Each.	Extra for Claw.
7 tons.	12 in.	20 in.	9 x 5½ in.	100 lbs.	$ 65.00	$ 8 00
7 "	18 "	26 "	9 x 5½ "	115 "	75.00	10 00
10 "	12 "	20 "	10 in	140 "	80.00	8 00
10 "	18 "	26 "	10 "	155 "	95.00	10 00
10 "	24 "	32 "	10 "	170 "	110 00	12 00
15 "	12 "	20 "	12 "	180 "	100.00	10 00
15 "	18 "	26 "	12 "	200 "	120 00	12 00
15 "	24 "	32 "	12 "	220 "	140 00	14 00
20 "	12 "	20 "	12 "	190 "	120 00	12 00
20 "	18 "	26 "	12 "	220 "	145 00	15 00
20 "	24 "	32 "	12 "	250 "	170 00	18 00
30 "	12 "	21 "	13 "	245 "	147 00	16 00
30 "	18 "	27 "	13 "	280 "	170 00	21 00
40	12 "	21 "	13 "	300 "	165 00	20 00
40 "	18 "	27 "	13	335 "	190 00	25 00
50 "	12 "	21 "	14 "	325 "	185 00	24.00
50 "	18 "	27 "	14 "	350 "	210 00	29 00
60 "	12 "	21 "	14 "	355 "	210 00	28.00
60 "	18 "	27 "	14 "	380 "	235 00	33 00
80 "	12 "	22 "	17 "	430 "	240 00	34 00
100	12 "	22	18 "	520 "	275 00	40.00



HYDRAULIC JACKS

Plain.

FIG 5444.

Broad Base.

FIG 5445

Claw.

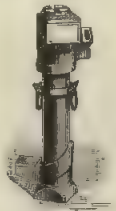


FIG 5446

Horizontal Claw.

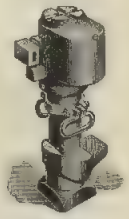


FIG 5447.

Capacity, tons	Rise, Inches	Plain	Broad Base	Claw	Horizontal Claw
4	12	$ 58 00	$ 62 00	$ 66 00	$ ...
5	4	50 00	.....	.....	.....
7	12	62 00	68 00	74 00	74 00
7	18	68 00	74 00	80 00	80 00
7	24	74 00	80 00	.....	.....
10	12	66 00	76 00	84 00	84 00
10	18	76 00	88 00	94 00	94 00
10	24	86 00	100 00	.....	.....
15	12	82 00	100 00	120 00	120 00
15	18	96 00	116 00	136 00	136 00
15	24	110 00	132 00	.....	.....
20	12	96 00	124 00	160 00	160 00
20	18	118 00	144 00	180 00	180 00
20	24	140 00	164 00	.....	.....
30	9	128 00	152 00	.....	.....
30	12	136 00	162 00	200 00	200 00
30	18	160 00	190 00	220 00	.....
All Steel					
40	12	176 00	200 00	240 00	240 00
40	18	200 00	230 00	.....	.....
50	12	206 00	240 00	.....	.....
50	18	.....	270 00	...	.....

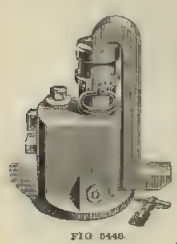


FIG 5448.

HORIZONTAL OR LOW HYDRAULIC JACK

Capacity, Tons	Rise, Inches	Price, Each	Capacity, Tons	Rise, Inches	Price, Each
7	12	$ 65 00	30	12	$145 00
7	18	75 00	30	18	170 00
10	12	80 00	40	12	165 00
10	18	95 00	40	18	190 00
10	24	110 00	50	12	185 00
15	12	100 00	50	18	210 00
15	18	120 00	60	12	210 00
15	24	220 00	60	18	235 00
20	12	120 00	80	12	240 00
20	18	145 00	100	12	275 00
20	24	170 00			

DUDGEON'S IMPROVED HYDRAULIC JACK

PLAIN JACK

For use in presses, or where there is a firm foundation or support.

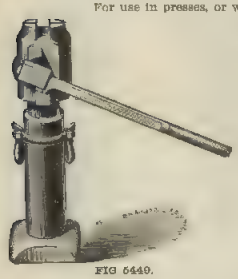


FIG 5449.

Tons, Lift	Run Out	Height, Inches	Size of Bottom, Inches	Weight, lbs.	Price, Each
4	12	24	4 sq.	46	$60.00
7	12	25	4¾ "	64	70.00
7	18	32	4½ "	72	73.00
10	12	25	6 "	80	80.00
10	18	32	6 "	98	85.00
10	24	39	6 "	110	110.00
15	12	26	6⅛ "	102	100.00
15	18	32	6⅛ "	120	125.00
15	24	39	6⅛ "	140	140.00
20	12	26	7 "	127	120.00
20	18	33	7 "	155	145.00
20	24	39	7 "	180	170.00
30	9	22	8 rd.	146	140.00
30	12	26	8 "	194	175.00
30	18	33	8 "	260	240.00
40	12	27	9 "	280	240.00
40	18	34	9 "	320	250.00

BASE JACK

For railroad work, or where a broad base, insuring stability, is required.

FIG 5450.

Tons, Lift	Run Out	Height, Inches	Diameter of Base, Inches	Weight, lbs.	Price, Each
4	12	23	9⅛	61	$60.00
7	12	25	10	82	80.00
7	18	31	10	100	85.00
10	12	25	11	109	95.00
10	18	31	11	125	110.00
10	24	39	11	145	125.00
15	12	27	12	135	95.00
15	18	32	12	158	90.00
15	24	39	12	178	175.00
20	12	28	12	168	130.00
20	18	33	13	198	175.00
20	24	39	13	228	200.00
30	9	22	14	210	170.00
30	12	26	14	259	200.00
30	18	33	14	300	235.00
40	12	27	14⅝	320	240.00
40	18	33	14⅝	380	280.00
50	12	28	15⅝	385	300.00
50	18	34	15⅝	410	310.00

CLAW OR GROUND LIFTING JACK

For machine shops, and for work that will not permit the head to be placed under the load

FIG. 5451.

Tons, Lift	Run Out	Height, Inches	Size of Bottom, Inches	Weight, lbs.	Price, Each
4	12	24	4 sq.	84	$80.00
7	12	25	1¼ "	90	85.00
7	18	31	4¼ "	110	88.00
7	24	38	4¼ "	123	90.00
10	12	25	6 "	123	100.00
10	18	32	6 "	144	120.00
10	24	39	6 "	170	145.00
15	12	26	6⅛ "	182	150.00
15	18	32	6⅛ "	189	185.00
20	12	26	7 "	207	200.00
20	18	33	7 "	245	240.00
30	12	26	8 rd.	310	250.00

WATCHES

"MIDGET" NICKEL

"MIDGET" ARTISTIC

"MIDGET" ROCOCCO

"MIDGET" 5 YEAR GOLD FILLED CASE

STEM WIND AND SET, ASSORTED ROMAN AND ARABIC DIALS

"MIDGET,"	6 Size,	Nickel Finish, Solid German Silver Case, Porcelate Dials	Each $2.00
"	6 "	Gilt " " " " " " " "	" 2.00
"	6 "	Oxidized " " " " " " " "	" 2.00
"	6 "	"Artistic" or "Grapevine" Solid White Metal Case, Engraved Relief Back, French Gray, Oxidized	" 2.50
"	"Rococco"	Cases made in three designs, Engraved with Relief Patterns on Back	" 3.00
"	6x0 Size,	Sterling Silver Case, Engine Turned Back	" 4.00
"	6x0 "	5 Year Gold Filled Case	" 4.00
"	6x0 "	10 " " " "	" 5.00

One in a Box

INGERSOLL "JUNIOR"

Thin Model, 12 Size, Stem Wind and Set, Solid Nickel Case, Assorted Roman and Arabic Dials

Nickel ..... Each $2.00
Gun Metal Finish " 2.00

One in a Box.

ASSORTMENTS

ASSORTMENT No. 1

Model	Finish	Price
6 Dollar Watches,	Nickel	$6.00
2 Eclipse "	"	3.00
2 " "	Gun Metal	3.00
2 Junior "	Nickel	4.00
2 " "	Gun Metal	4.00
2 Midget "	Nickel	4.00
2 " "	Gun Metal	4.00
1 Show Case (half cost)		0.00
		$28.00

Free Advertising: 1 Window Bracket in Gold, Black and White. Set of Show Cards, Hangers and Easels.

ASSORTMENT No. 2

Model	Finish	Price
12 Dollar Watches,	Nickel	$12.00
4 Eclipse "	"	6.00
4 " "	Gun Metal	6.00
4 Junior "	Nickel	8.00
4 " "	Gun Metal	8.00
4 Midget "	Nickel	8.00
4 " "	Gun Metal	8.00
1 Show Case (half cost)		0.00
		$56.00

Free Advertising: 1 Window Bracket in Gold, Black and White. Signs in Natural Color, Panel Show Cards, Hangers, etc.

The above contains a minimum quantity of each model, and assorted in just about the way they will sell.

WATCHES

NO. 49

16 Size, German Silver Case, Jeweled Movement, Tool Steel Pinions, Porcelain Dials, Open Face, Stem Wind and Set, Arabic Dials.

No. 49 Engraved Back ..... Each $2.50

NO. 458

Ladies, 6 Size Watch, Solid Nickel Silver Case, Stem Wind and Set, Porcelain Arabic Dials.

No. **458** .... Each $2.75

NO. 1102

12 Size, Extra Thin Model, Solid Nickel Silver Case, Damaskeened Movement, Jeweled Escapement, Porcelain Arabic Dials, Stem Wind and Set.

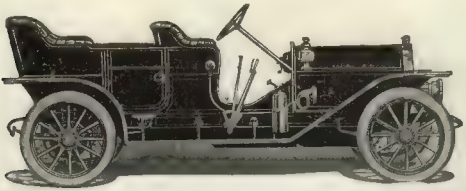
No. 1102 . Each $3.00

NO. 41

18 Size Railroad Watch, Fine Jeweled Movement, Solid 3 oz. Silverode Case, Dust and Moisture Proof, Screw Back and Beze., Bold Arabic Porcelain Dials, Engraved Locomotive Back

No. **41** ..... Each $3.50

One in a Box.



40 H. P. NEW Touring Model 30A, With Regular Equipment, $1750

The Cars That Are Creating the Biggest Sensation of the Day

OUR recent announcement about the World's Two Greatest Automobile Values has astonished the nation. It has aroused the curiosity of thousands. It has disproved the ideas of the entire automobile buying public. No longer is it possible to judge a car by its price. No longer is it necessary to pay big prices for big cars of high quality. No longer are you compelled to put up with shipment delays and broken contracts. We have done away with all the shortcomings of old-time methods. We have started a *new era* in automobile manufacture.

NEW AUGUST 1st Inter-State MODELS, $1750, $2000

The Special New 40 H. P. Torpedo Model, $2,000

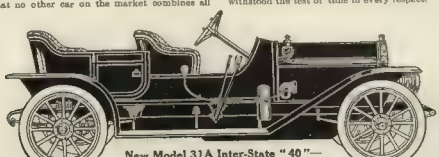
Just think of it! A great big 40 H. P. Car with a 4½-inch bore by a 5-inch stroke motor and a 118-inch wheel base for only $1750. And the motor is the *most simple* of all motors, embodying only the best features of modern motor car practice.

But that's only *part* of the extra value the Inter-State offers you. It has a double ignition system; a rolling push rod contact on the cam shaft; integral water pump, oil pump and an imported high tension magneto all located on one side of the motor and driven by one shaft. You will find that no other car on the market combines all these high-grade features. And you can find none whose parts are so easily accessible.

It would cost you far more than $1750 to duplicate the fine finish, the durability, the artistic harmony and the smooth-riding qualities of the Inter-State.

And it would cost far more than $1750 to duplicate the same refinement, the same high quality of materials and superior workmanship as is found throughout the entire chassis of the Inter-State.

You can find no car that will stand more severe service than the Inter-State. And no car that has better withstood the test of time in every respect.



New Model 31A Inter-State "40"—
Demi-Tonneau, $1,750

SEND FOR NEW BOOK!

Tear This Out!

See the cars in their exact colors. Learn all about the many high-class features that limited space here prevents our describing. Just fill out the coupon. We will send the book by return mail.

Inter-State Automobile Co.

MUNCIE, IND.

Licensed Under Selden Patent

Write for information regarding choice territory for dealers

A Reminder

Inter-State Automobile Co., Muncie Ind.

You may send your new book.

Name _____

Address _____

IVER JOHNSON REVOLVERS

PERFECT SAFETY HAMMERLESS AUTOMATIC

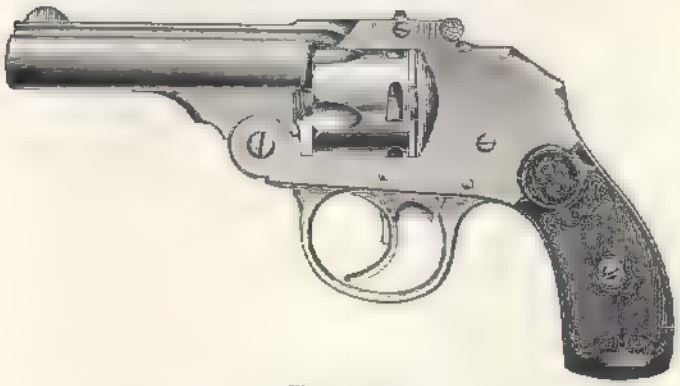


Fig. 8895A

PERFECT SAFETY HAMMERLESS AUTOMATIC, 5 SHOTS, S. AND W. CENTER FIRE CARTRIDGES, RUBBER HANDLES

Price,	32	Calibre,	4-inch	Barrel,	Nickel Plated	each	7.50
"	32	"	4	"	"	Blued	"	8.00
"	38	"	4	"	"	Nickel Plated	"	7.50
"	38	"	4	"	"	Blued	"	8.00

SAFETY HAMMER AUTOMATIC

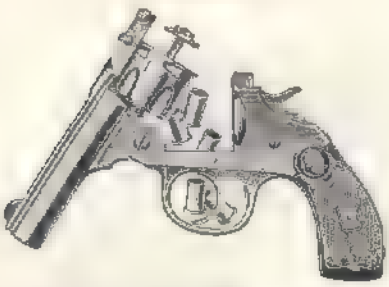


Fig. 8895B

MODEL 1900 DOUBLE ACTION

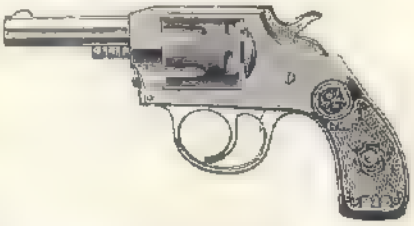


Fig. 8895C

SAFETY HAMMER AUTOMATIC, 5 SHOTS, S. AND W. CENTER FIRE CARTRIDGES, RUBBER HANDLES

Price,	32	Calibre,	Nickel Plated	each	6.50
"	32	"	Blued	"	7.00
"	38	"	Nickel Plated	"	6.50
"	38	"	Blued	"	7.00

MODEL 1900, DOUBLE ACTION OR BULL DOG, SOLID FRAME RUBBER HANDLES, S. AND W. CENTER FIRE CARTRIDGES, 5 SHOTS

Price,	32	Calibre,	2½-inch	Barrel,	Nickel Plated	each	3.50
"	38	"	2½	"	"	"	3.50

LYMAN SIGHTS AND CARTRIDGE BELTS

SIGHTS

No. 1

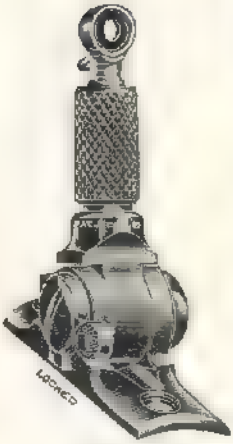


Fig. 8917A

No. 2

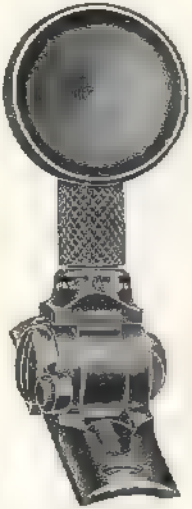


Fig. 8917B

No. 21

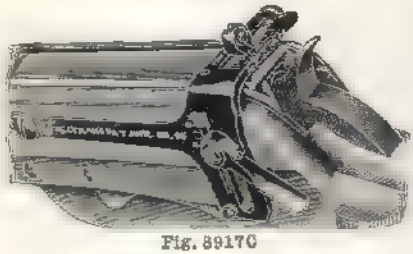


Fig. 8917C

No. 5 COMBINATION SIGHT

Fig. 8917D

Fig. 8917E

No. 6 LEAF SIGHT

Fig. 8917K

No. 4

Fig. 8917F

No. 3

Fig. 8917G

Fig. 8917H

Fig. 8917J

Number	1	2	21	5	4	3	6
Price, each	3 00	3 50	3 50	1 00	50	1 00	1 00

CARTRIDGE BELTS

No. 10

Fig. 8917L

No. 15

Fig. 8917M

Price, No. 10 Canvas Belt for 12 gauge Shells	per dozen	6.00
" No. 17 Heavy Russet Leather Belt for Rifle Cartridges, from 25 to 45 Calibre	"	10 00
" No. 15 Heavy Russet Leather Belt for 12-Gauge Shells	"	12 00

JACOBSON WATER JACKETED AIR COMPRESSORS

SINGLE CYLINDER

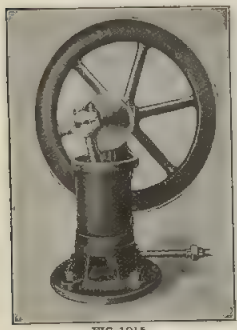


FIG 1015

These compressors are designed and built to meet the requirements of automobile repair shops, pneumatic water supply installations, and are also especially suited for use in connection with pneumatic gas engine starting apparatus. The fly-wheels are crowned in order that they may be driven by a belt. These wheels are also provided with handle to facilitate operating by hand power. All machines are tested for a working pressure of 200 pounds per square inch, and are capable of handling their rated capacity in free air at any pressure up to 200 pounds per square inch.

Cubic ft. free Air per Minute	Diameter of Cylinder	Stroke	Revolutions per minute	Air Delivery	Water Pipe	Floor Space	Diameter of Pulley
3½	3 in.	4 in.	200	½in.	¼in.	24x20in.	24x3 in.

Approximate weight with one fly-wheel, 210 pounds.
Approximate weight with fly-wheel and loose pulley, 250 pounds.
Price with one fly-wheel, 50.00. Price with fly-wheel and loose pulley, 60.00.

TWO-CYLINDER TYPE

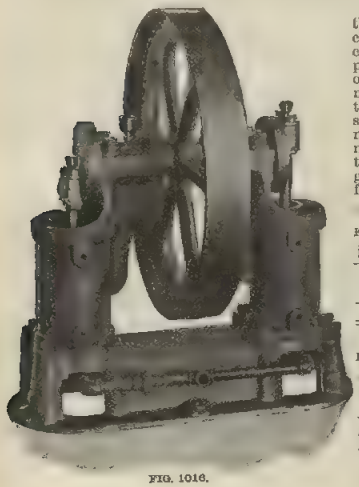


FIG. 1016.

This compressor is the same as the single cylinder machine in construction and design. The two cylinders are so arranged that one piston is compressing when the other is returning, so that it does not take any wider belt to drive the double machine than the single, but it delivers just twice as much free air per minute. These machines are especially suited to the work of handling pneumatic gas engine starters for engines of from 75 to 200 H. P. per cylinder.

Cubic Ft. Free Air Per Minute	Diam. of Cylinder	Stroke	Rev. Per Minute
6¼	3 in.	4 in.	200
27	5 in.	6 in.	200

Air Delivery	Water Pipes	Floor Space	Diam. of Pulley
½	¼ in.	24x31 in.	24x3 in.
1½	⅜ in.	30x40 in.	30x5½in.

Approximate weight of 3x4—840 pounds.
Approximate weight of 5x6—900 pounds.
List price of 3x4.....100.00
List price of 5x6.....250.00

SMITH-VAILE CONDENSERS

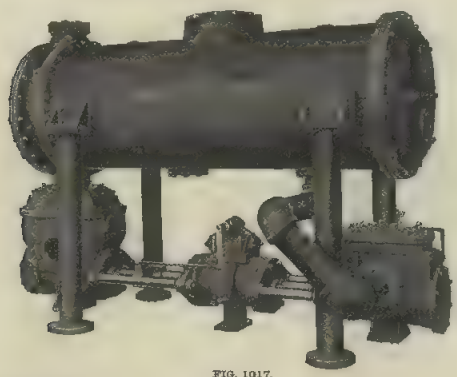


FIG. 1017.

BAROMETRIC CONDENSER

FIG. 1018

SURFACE CONDENSER WITH VACUUM AND CIRCULATING PUMPS

SURFACE CONDENSERS OF ALL TYPES AND FOR ALL KINDS OF SERVICE. BAROMETRIC TUBE CONDENSERS FOR STEEL MILLS, BLAST FURNACES, AND CENTRAL CONDENSER SYSTEMS OF ALL SORTS. HIGH VACUUM CONDENSERS FOR STEAM TURBINES. INDEPENDENT JET CONDENSERS FOR ISOLATED PLANTS

Write for quotations, giving full information as to the type and size of engines to be condensed, the source and quantity of cooling water available, temperature of cooling water, elevation of power plant above, and distance from, water supply.

WRENCHES

AGRICULTURAL

Wrought Bar.

Size, inches	6	8	10	12	15
Black	Per dozen $10.00	12.00	14.00	17.00	24.00

Half dozen in a Package.

P. S. & W. SOLID HANDLE WRENCH

One Piece, Solid Steel Forging.

The Head, Bar, Shoulder and Handle Frame being forged solid of one piece and case-hardened, insures uniform strength and overcomes the weak point in other Screw Wrenches, which are liable to break at a point on the Bar opposite the Knurled Thumb Screw.

Size, inches	6	8	10	12	15	18	21
Will open, inches	⅞	1¼	1¾	2¼	2¾	3¼	4¼
Black	Per dozen $9.00	10.00	12.00	14.00	24.00	30.00	36.00
Dozen in a Box	½	½	½	⅝	⅝	⅝	1/12

COES GENUINE KNIFE HANDLE

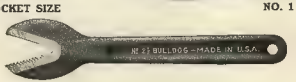
Handle, Cast Semi-Steel Frame, Hardwood sides. Secured at both ends by insertion under metal and riveted up under pressure. Screw, Steel Hardened and in one piece. Jaw, Semi-Steel Casting, Hardened. Bar, Steel, specially imported material and fully hardened.

Size, inches	6	8	10	12	15	18	21
Black	Per dozen $9.00	10.00	12.00	14.00	24.00	30.00	36.00
Dozen in a Box	½	½	⅝	¾	⅘	⅕	⅓

ALLIGATOR

NO 0. POCKET SIZE

NO. 1



NO. 2

Forged Steel.

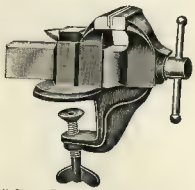
No. 0	Length,	4	inches,	Holds Pipe	⅛	to	¼	inch and Round Iron	⅛	to	5/16	inch.	Per dozen	$3.00
" 1	"	5¾	"	"	"	⅛	"	⅜	"	"	"	½	"	¾	"	"	4.00
" 2	"	9	"	"	"	⅜	"	¾	"	"	"	"	1	"	"	"	12.00

No. 0, one dozen in a Box. No. 1 and 2, half dozen.

JERSEY VISES

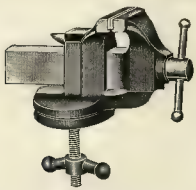
All Clamp Bottom Vises, Plain Iron Jaws.

No.	Width of Jaw, inches.	Weight, pounds.	Each.
40	1½	3	.75
42	1¾	3½	.95
44	2	3¾	1.15
46	2¼	4	1.50
48	2½	5	1.75
52	3	8¼	2.40



All Clamp Bottom Vises, Steel Faced Jaws.

No.	Width of Jaw, inches.	Weight, pounds.	Each.
41	1½	3	$1.00
43	1¾	3½	1.25
45	2	3¾	1.50
47	2¼	4	1.75
49	2½	5	2.10
53	3	8¾	2.85



Swivel Based Vises, with Steel Faced Jaws.

No.	Width of Jaw, inches.	Weight, pounds.	Each.
56	1¾	3	$1.25
57	2	3¾	1.50
58	2¼	4½	1.90
59	2½	5½	2.35
61	3	9½	3.15

JERSEY VISES, IN SETS

NO. 10 ASSORTMENT

Contains Display Stand and 18 Vises as follows:

Vise ..... No.	40	42	44	46	47	48	49	52	56	58
Quantity	3	3	3	2	1	2	1	1	1	1

Per Set, as described $26.26

HAND VISES

Common, Solid Steel, Bright Jaws.

Size, inches	3½	4	5	6
No. 186	Per dozen $3.25	3.50	4.20	6.30

Standard Quality, Solid Cast Steel, Polished Jaws.

Size, inches	3½	4	5	6
No. 6826	Per dozen $5.30	5.30	9.10	12.70

Half dozen in a Box.

CONDUCTORS' TICKET PUNCHES

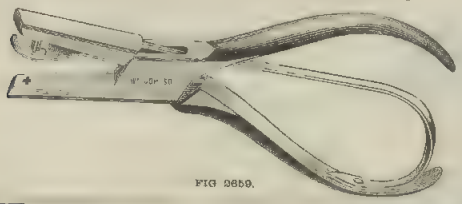


FIG 2659.

		List, Nickel Plated, Per Dozen	List, Polished, Per Dozen
No. 247	Fancy Hole, Reach of Jaw ¾ inch	$12 00	$11.00
" 249	Round " " " " ¾ "	10.00	9.00

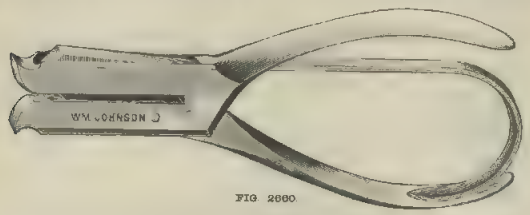


FIG 2660.

This is a complete Box Punch, the working parts being entirely inclosed, and is one of the best forms for a conductor's punch.

No. 257	Assorted Dies, Nickel Plated, Reach of Jaw 1 in., List per doz.	$30 00
" 258	" " " " " " " 1½ " " " " "	34.00
" 259	" " " " " " " 2 " " " " "	45.00

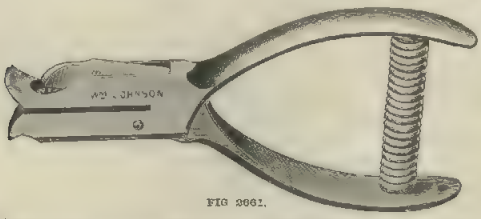


FIG 2661.

No. 263	Reach of Jaw 1 in., Assorted Dies, Nickel Plated, List, per doz.	$36.00
" 264	" " " 1¼ " " " " " " " " " "	42.00
" 265	B. C.—(Baggage Check), " " " " " "	48.00
" 266	2nd—(Second Class), " " " " " "	48.00
" 267	½—(Half Fare), " " " " " "	60.00
" 268	Reach of Jaw 2 inches Assorted Dies, " " " " " "	50.00

ROLLER BEARING RATCHET SCREW JACKS

FIG. 5434

No. 58. Cone Bearing Car Inspector's or Journal Jack. One man can easily replace horses in a truck with one of these jacks. The height is 11 inches with a raise of 5 inches.

No. 60. Adapted for all general purposes.

No. 62. For extra heavy work of any character, including car repair work, etc.

No. 64. For heavy work. Has a foot lift for low set loads

No. 58

FIG. 5435

No. 60

FIG. 5436

No. 62

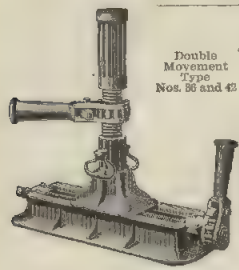
FIG. 5437

No. 64

FIG. 5438

No.	Capacity in Tons	Height in Inches	Raise in Inches	Size of Base in Inches	Diam. of Head in Inches	Weight in Pounds	List Price
55	10	14	7	6 x10	5	65	$ 22 00
56	10	20	10	7½x 7½	5	95	24 00
58	10	11	5	.....	.....	89	20 00
57	15	9¾	4	.....	.....	62	22 00
59	25	10	4½	.....	.....	70	55 00
60	15	23	10	5 x 9	5	110	60 00
61	15	28	12	5 x 9	5	123	70 00
71	15	18	7	10" Diam.	5	76	60 00
73	15	20	9	10" Diam.	5	80	60 00
72	15	23	10	10" Diam.	5	85	60 00
74	15	28	12	10" Diam.	5	95	70 00
67	25	23	10	8 x11	6	135	90 00
81	25	27	13	8 x11	6	180	95 00
81	25	20	9	10" Diam.	6	110	80 00
83	25	24	11	11" Diam.	6	150	85 00
82	25	26	13	12" Diam.	6	155	90 00
63	25	26	23	12" Diam.	6	200	100 00
68	25	23	10	9 x10½	6¾	200	130 00
69	25	28	13	9 x10½	6¾	225	138 00
91	35	26	13	12" Diam.	6¾	178	125 00
92	35	31	18	12" Diam.	6¾	190	125 00
93	35	36	23	12" Diam.	6¾	215	145 00
64	50	27	13	14" Diam.	10½	300	150 00
70	70	37	18	14" Diam.	10½	350	200 00

ALL NUMBERS CARRIED IN STOCK



Double Movement Type Nos. 36 and 42

FIG. 5440.

JOYCE-CRIDLAND TRAVERSING JACKS

We furnish any Joyce-Cridland Jacks with suitable ratchet operated, traversing bases, or we can furnish separately a base having a large sliding plate or rest on which any jack can readily be used. The horizontal movement of the standard base is 15 inches, but any other amount of movement is made to order.

Telescoping Type—Nos. 37, 37a, 60 and 60a.

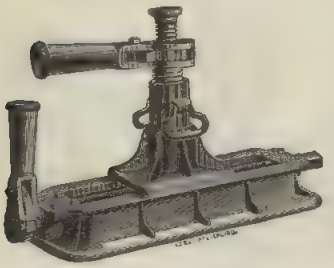


FIG. 5441.

Rapid Movement Type—Nos. 35 and 41

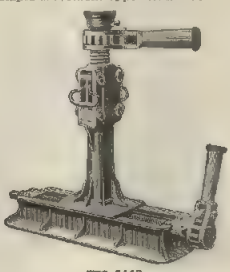


FIG. 5442.

Number	Height When Down, In.	Safe Elevation, In.	Horizont'l M'vem't, In.	Weight Complete, Lbs.	Capacity, Tons	Price	Rise of Screw, In.
35	27	10	15	172	25	$75.00	..
36	23	10	15	143	25	68.00	.....
37	15	.....	15	127	8	55.00	10
37 a	15	.....	15	115	8	55 00	10
41	30½	.....	15	300	50	150 00	11
42	26	.....	15	230	50	125 00	12
60	18	.....	15	149	15	75 00	14
60 a	18	.....	15	105	15	63.00	14

TRAVERSING BASES

Number	Weight, Lbs.	Capacity Tons	Price
40	90	25	$40 00
43	180	50	60.00

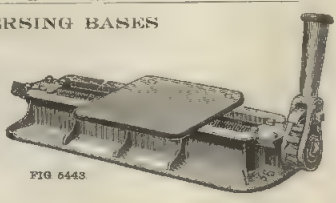


FIG 5443

WILSON DRILL

HOOK OVER TOP OF RAIL

In Position For Work

FIG. 4876.

Thrown Back to Detach From Rail

FIG. 4877.

Quick acting for light work. Especially designed for bond wire holes for track circuit signal work.

Weight ..... pounds, 25

List price, complete for using twist bits $25.00

" " " with Rich Spindle and one flat bit 28.50

Under Clutch in Position

FIG. 4878.

PRICES OF BITS FOR USE IN WILSON DRILLS

TWIST BITS

Diameter, Inches	List Price, Each	Length
15/64	$0.26	4
1/4	.28	4
9/32	.32	4

RICH FLAT BITS

Diameter, Inches	List Price, Each	Length
15/64	$0.65	4
1/4	.65	4
9/32	.65	4

JUMBO TRACK DRILLS

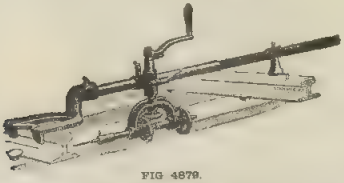


FIG 4879.

Large quantities have been used for track work, for drilling holes through rails for electric bonding wires and for binding rods, etc. Engineers and others will at a glance see its utility and convenience. Two sets of gears go with each Drill, making it either speeded or geared back. It weighs 95 lbs. and will carry Drills up to 1 inch.

List price.....each, $25.00

THE "IXL" TRACK DRILL

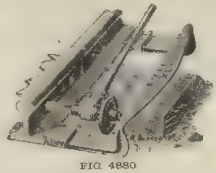


FIG 4880.

To fasten under the rail. List price.....each, $8.00

1. It is strong, light and easily adjusted.
2. The clamp, being of steel, will not break.
3. It drills holes for a joint without drawing the spikes or moving the clamp.
4. Adjustment from one hole to another is done more easily than with any similar tool.
5. The ratchet may be used wherever needed, it being a ratchet drill with hand-feed wheel.

Complete as shown in cut, with one drill point. Extra drill points, 50 cents each.

THE PAULUS FEED TRACK DRILL

FIG. 4883.

AUTOMATIC FEED

FIG 4881.

Showing Drill thrown back for passing train.

Regular style for use of twist drills. Weight 60 lbs. List price complete with one twist bit. $25.00

F. 10 Baby Tonneau

KISSEL KAR

EVERY INCH A CAR

WE GUARANTEE PROMPT DELIVERY ON ALL ORDERS ACCEPTED

The little 30 H. P. $1500 Kissel Kar on the Fourth of July finished first in the three mile stock car race, the most hotly contested event known to the Dallas, Texas, track. Two D. 10 Models finished with perfect scores in Wisconsin's banner event—a reliability run over some of the toughest roads in the state.

Dropped frame; ¾ elliptic springs fastened to rear end of frame: selective type; ball bearing transmission, four speeds forward and reverse, with direct drive on third speed and geared up on fourth; double internal brakes, double ignition.

D. 10

50 H. P., 120-inch Wheel Base

Touring	$2000
Baby Tonneau	2000
Coupe	2600
Limousine	3200

F. 10

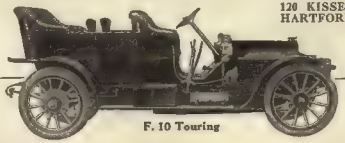
50 H. P., 124-inch Wheel Base

Touring	$2500
Baby Tonneau	2500
Coupe	3100
Limousine	3700

WRITE FOR CATALOG

KISSEL MOTOR CAR COMPANY

120 KISSEL AVE.
HARTFORD, WIS.



F. 10 Touring

1911 METZ RUNABOUT, $485.00

Fully assembled and completely equipped as shown at above price. Sold exclusively through dealers.
We want good, live dealers—those who believe in low price, economical cars and can sell them.
It will pay the wide-awake dealer to get in touch with us.
METZ COMPANY Waltham, Mass.

LANE STEAM CAR

Lane Motor Vehicle Co., Poughkeepsie, N. Y.

BALL BEARINGS
for Magnetos, Timers, Speedometers, Radiators, Fans, etc.
Also STEEL, BRASS, BRONZE
PRESSED STEEL MFG. CO., 454 Bourse, Philadelphia, Pa., U. S. A.

Special Parts Manufacturing
Parts made from Bar Steel up to 7 inches diameter
ASHLEY MACHINE WORKS :: 714 University Avenue ROCHESTER, N. Y.

Warner Gear Company, Muncie, Indiana
Steering Gears, Transmissions, Differentials, Clutches and Control Levers.

25 H. P. Planetary Transmission. Showing both Cone and Disc Type Clutch.

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also 128 Liberty St., New York; 55 N. Second St., Phila., Pa.; 174 Lake St., Chicago, Ill.

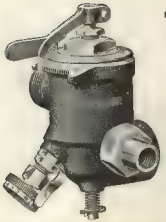
HELMET OIL for AUTOMOBILE BEARINGS
FOR AUTOMOBILES:—Use on all bearings except cylinders. Can be used in all carbureters and separators. Write for our interesting and practical booklet, "Auto Lubrication," mailed free. A liberal quantity free. Write us your dealer's name and we will have him deliver you a Free Test sample to try.
C. H. BESLY & CO. 118-124 N. Clinton St. Chicago.

LOCOMOTIVE JACK SCREWS

FIG 5413

Capacity, Tons	Diameter of Screw	Height of Stand, Inches	Height Over All, Inches	Price, Each	Capacity, Tons	Diameter of Screw, Inches	Height of Stand, Inches	Height Over All Inches	Price, Each
10	1¼	4	6⅝	$2.90	24	2¼	6	10	$7 00
10	1¼	6	8⅝	3.10	24	2¼	8	12	7 50
10	1¼	8	10⅝	3.40	24	2¼	10	14	8 25
10	1¼	10	12⅝	3.80	24	2¼	12	16	9 00
10	1¼	12	14⅝	4.20	24	2¼	14	18	10 00
10	1¼	14	16⅝	4.60	24	2¼	16	20	11 00
12	1½	4	7	3.25	24	2¼	18	22	12 00
12	1½	6	9	3.75	24	2¼	20	24	13 25
12	1½	8	11	4.25	24	2¼	22	26	14 50
12	1½	10	13	4.75	24	2¼	24	28	15 75
12	1½	12	15	5.25	28	2½	6	10½	7 75
12	1½	14	17	6.00	28	2½	8	12½	8 75
12	1½	16	19	6.75	28	2½	10	14½	9 75
16	1¾	5	8⅛	4.25	28	2½	12	16½	10 75
16	1¾	6	9⅛	4.80	28	2½	14	18½	12 00
16	1¾	8	11⅛	5.00	28	2½	16	20½	13 25
16	1¾	10	13⅛	5.75	28	2½	18	22½	14 50
16	1¾	12	15⅛	6.25	28	2½	20	24½	15 75
16	1¾	14	17⅛	6.75	28	2½	22	26½	17 00
16	1¾	16	19⅛	7.50	28	2½	24	28½	18 25
16	1¾	18	21⅛	8.50	28	2½	28	32½	22 00
20	2	5	9	5.00	28	2½	32	36½	26 00
20	2	6	10	5.25	36	3	14	18½	19 50
20	2	8	12	6.00	36	3	16	20½	20 75
20	2	10	14	6.75	36	3	18	22½	22 00
20	2	12	16	7.50	36	3	20	24½	23 25
20	2	14	18	8.25	36	3	22	26½	24.50
20	2	16	20	9.25	36	3	24	28½	25 75
20	2	18	22	10 25	36	3	30	34½	30 00
20	2	20	24	11 50	.....	..	..	..	.
20	2	22	26	12 50	.....	...			
20	2	24	28	13 50	.....	.	.	..	....

Levers will be sent only when ordered, and will be charged for extra. Car Box Jack Screws, furnished in sizes listed above, at 50 cents advance on list.



TYPE A
With sliding throttle controlling the outlet passage. No regulation for lift of disc.

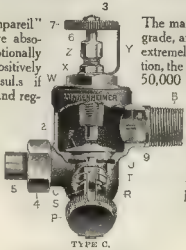
Successful Where Others Have Failed

Gasoline engines that could not be made to work satisfactorily have given results when equipped with

LUNKENHEIMER "Nonpareil" Generator Valves

Lunkenheimer "Nonpareil" Generator Valves are absolutely reliable, exceptionally durable and will positively give satisfactory results if properly connected and regulated.

They are made in a variety of styles and in sizes ranging from ¼ to 2 inches inclusive.



TYPE C.
With means for regulating lift of disc and butterfly valve in plunger outlet.

The material is of the very highest grade, and the discs are made of an extremely strong bronze composition, the tensile strength being about 50,000 pounds per square inch.

A copy of our Automobile and Motor Boat Specialty Catalogue will be sent upon request. It's free.

Your local dealer can supply them; if not, write us.

THE Lunkenheimer Company

Largest Manufacturers of High-Grade Engineering Specialties in the World

GENERAL OFFICES AND WORKS

CINCINNATI, OHIO, U. S. A.

BRANCHES:

NEW YORK, 64-68 Fulton Street
CHICAGO, 32 Dearborn Street, cor. Lake
LONDON, S. E., 35 Great Dover Street

199

TYPE B
With regulation for lift of disc. No throttle valve.

LUNKENHEIMER BRASS STEAM WHISTLES

All Brass with Adjustable Lever

FIG. 874

All Brass without Valve

FIG. 875

Diameter of Bells, inches	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12
Size of Pipe Connection, inches	¼	¼	⅜	½	¾	¾	1	1¼	1	1½	2	2½	3
Brass Whistles with Adjustable Lever, each	3 10	3 75	4 00	5 00	6 50	8 50	11 50	15 00	22 50	33 00	95 00	210 00	420 00
Brass Whistles without Valve, each	2 50	2 75	3 00	3 75	5 25	7 25	9 50	12 00	18 00	24 00	70 00	150 00	300 00

IRON BASE BRASS BELL STEAM WHISTLE

SAME AS FIGURE 875 EXCEPT BASE IS IRON

Diameter of Bells, inches	3	3½	4	5	6	8	10	12
Size of Pipe Connections, inches	¾	1	1¼	1½	1½	2	2½	3
Iron Base Whistles without Valve, each	5 50	7 25	10 00	16 00	24 00	65 00	125 00	250 00

LUNKENHEIMER THREE-WHISTLE CHIME

ALL BRASS OR BRASS BELLS IRON BASES AND BRANCH

No. 1	Size Pipe Connection, inch	1
	Composed of one each 1½, 2 and 2½ inch Whistles, Iron Branch	23 00
	Composed of one each 1½, 2 and 2½ inch Whistles, Brass Branch	27 00
No. 2	Size Pipe Connection, inches	2
	Composed of one each 3½, 4 and 5 inch Whistles, Iron Branch	40 00
	Composed of one each 3½, 4 and 5 inch Whistles, Brass Branch	66 00
No. 2½	Size Pipe Connection, inches	2
	Composed of special short Whistles (very shrill), Iron Branch	70 00
	Composed of special short Whistles (very shrill), Brass Branch	80 00
No. 3	Size Pipe Connection, inches	3
	Composed of one each 5, 6 and 8 inch Whistles, Iron Branch	100 00
	Composed of one each 5, 6 and 8 inch Whistles, Brass Branch	100 00
No. 3½	Size Pipe Connections, inches	3
	Composed of special long Whistles (very harmonious), Iron Branch	180 00
	Composed of special long Whistles (very harmonious), Brass Branch	190 00

FIG. 876

COMMON STEAM WHISTLES AND WHISTLE VALVES

Without Valve

FIG. 870.

Diameter of Bell..inches	1	1¼	1½	2	2½	3
Size of Steam Pipe..inches	½	½	½	¾	¾	1
Whistle, without Valve .....each	2.20	2.75	3.00	4.35	5.25	7.25
Whistle, with Valve..each	3.10	3.75	4.00	5.50	6.50	8.50
Whistle Valv. .....each	2.50	2.50	2.50	3.00	3.00	3.50

Diameter of Bell..inch.	3½	4	5
Size of Steam Pipe "	1	1¼	1½
Whistle without Valve ..... each	9.50	12.00	19.00
Whistle with Valve "	11.50	15.00	22.50
Whistle Valves .... "	3.50	5.00	6.00

Diameter of Bell..inch.	6	8	10
Size of Steam Pipe.inch.	2	2½	2½
Whistle without Valve ..... each	24.00	70.00	150.00
Whistle with Valve "	83.00	95.00	210 00
Whistle Valves..... "	9.00	18.00	27.00

With Valve

FIG. 871

In ordering state Figure and Diameter of Bell,

SINGLE BELL CHIME STEAM WHISTLES

Chime Whistles produce an agreeable sound in contrast to the harshness of the common whistle, and besides are far more penetrating. They are solid in construction and of best steam metal, insuring great durability and satisfaction.

Without Valve

FIG. 872.

Diameter of Bell .....inches	2	3	4	5
Size of Steam Pipe....inches	½	¾	1	1¼
Whistle without Valve.....each	5.00	8.00	14 00	22.00
Whistle with Valve.....each	7.00	11.00	18.00	28.00

Diameter of Bell .....inches	6	8	10	12
Size of Steam Pipe....inches	1½	2	2½	3
Whistle without Valve.....each	38.00	85.00	150.00	260.00
Whistle with Valve.....each	42.00	100.00	180.00	300.00

In ordering State Figure and Diameter of Bell.

With Valve

FIG. 873.

SEARCHLIGHT LANTERNS

"DEFIANCE"

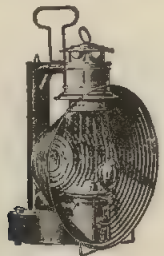


FIG. 4182.

Blue Japanned. Made on "Cold Blast" principles and is wind proof. Reflector 11¾ inches in diameter. No. 2 "Cold Blast" burner, 1 inch wick, No. 0 "Cold Blast" bull's eye globe.....per dozen, $30.00

1-4 DOZEN IN A CASE. WEIGHT OF CASE, 15 POUNDS.

STREET LAMPS

Post

FIG. 4183.

Hanging

FIG 4183A.

Post; green frame, regulates to burn a certain number of hours. Can be filled and lighted without removing globe. Has No. 3 burner, 1⅛ inch wick and No. 9 globe.....each, $6 00

Hanging; otherwise same as above..... " 5.50

ONE IN A BOX. WEIGHT 25 POUNDS

No. 20. TIN TUBULAR COLD BLAST SEARCH-LIGHT

No. 20.

Reflector, 12 inches Diamater, 7 inches deep, No. 2 Cold Blast Burner, 1-inch "B" Wick, No. 0 Cold Blast Globe. Finished in Blue Japan. A very Popular Lamp.
Price, per dozen $30 00

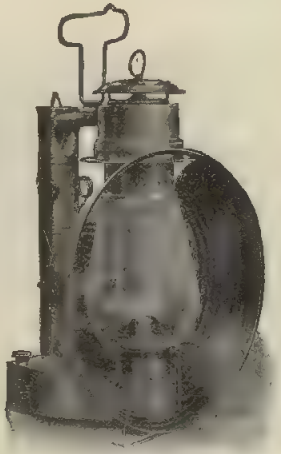


FIG 4180.

No. 40.

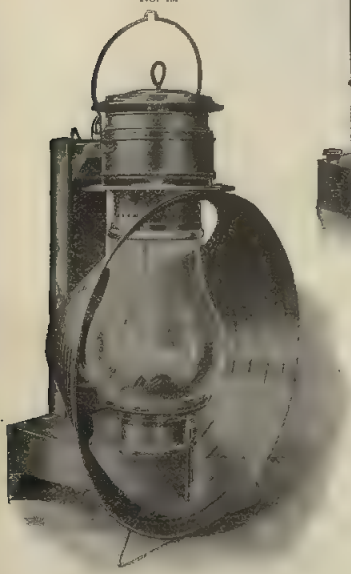


FIG 4181.

No. 40. MAMMOTH SEARCH-LIGHT

A WONDERFUL LIGHT GIVER

Larger than No. 20. Has No. 9 Burner, 1¼ inch "D" Wick, Reflector, 16 inches Diameter, 8½ inches deep. Finished in Green Japan.
Price, each $6 00

A complete line of Globes, Burners and Wicks carried in stock. Prices on application.

MANY-USE OIL

2 OUNCE BOTTLES

Per dozen $1.30

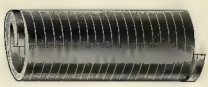
2 OUNCE CANS, LONG SPOUT

Per dozen $1.60

4 OUNCE CANS, SHORT SPOUT

Per dozen $2.50

One dozen in a Box.



LEATHER AXLE WASHERS

PATENT ADJUSTABLE COIL AXLE WASHERS

Size, inches	⅞	1	1⅛	1¼
Per hundred	.90	1.00	1.10	1.20

One hundred in a Box, five Coils of twenty Washers each.

NUT AND COLLAR WASHERS

Five Sets in a Box, each Box containing Twenty Collar and Twenty Nut Washers

For Axles, inches	⅞	1	1⅛	1¼
Per Box	.70	.80	.90	1.00	1.10

One Set in a Box, Eight Sets in a Carton

For Axles, inches	⅞	1	1⅛	1¼
Per Carton	$1.20	1.20	1.50	1.75	2.00

The above is the most convenient way to purchase these goods. We can supply Collar and Nut Washers separately as per list annexed.

Size of Axle	NUT Inside, in.	NUT Outside, in.	Per 100.	COLLAR Inside, in.	COLLAR Outside, in.	Per 100.
⅞	⅞	1⅜	$1.75	1 1/16	1⅜	$2.25
1	1 1/16	1⅝	1.75	1⅛	1½	2.50
1⅛	1 1/16	1⅝	2.25	1 5/16	1½	2.50
1¼	1 5/16	1 15/16	2.50	1 7/16	1⅞	2.75

Fifty in a Box.

MARBLE SAFETY AXES AND KNIVES

No. 1 AX, GUARDED

Fig 8973A

No. 2 AX, OPEN

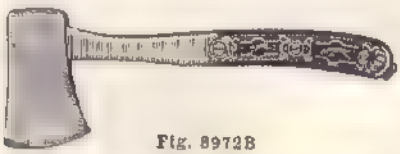


Fig. 8972B

Price, No. 1, weight 12 ounces, length, 11 inches . . . . . each 2 50
" " 2, " 20 " " " " 2 50

Nickel Plated Spring Hinged Guards lined with Lead.
Solid Cast Steel Blades, Drop Forged Handles with Rubber Side Plates

Nos. 4 AND 6 AX, GUARDED

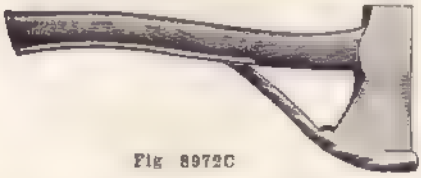


Fig 8972C

No. 2P AX, GUARDED

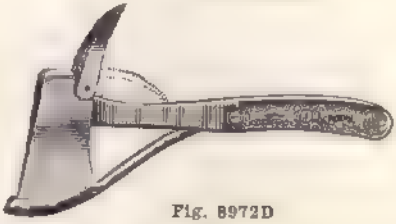


Fig. 8972D

Price, No. 4, weight 24 ounces, length 12 inches . . . . . each 1 75
" " 6, " 20 " " 13 " 1 50
" " 2P, " 20 " " 11 " 4 00

No. 4 has Blade like No. 1 but with Wood Handle, No. 6 has Welded Steel Blade. No. 2P, same as No. 2 with Adjustable Locking Pick Point.

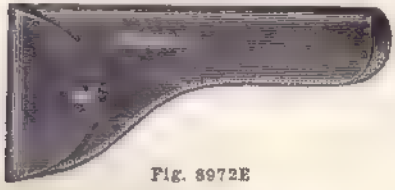


Fig. 8972E

LEATHER AND CANVAS AX SHEATHS

Price, No. 19, Leather, full length . . . . . each 1 00
" " 20 " " " " 75
" " 21 Canvas " " " 35

No. 83 KNIFE, OPEN

Fig. 8972F

No. 83 KNIFE, CLOSED

Fig 8972G

Price, Safety Lock, Bone Clipper on Back of Blade, Bolsters and Lining of German Silver Side Plates, Engraved Black Hard Rubber, 4½ inch Blade, weight 4 ounces . . . . . each 3 00

POCKET COMPASSES

No 1790

Fig. 9145A

No. 1723

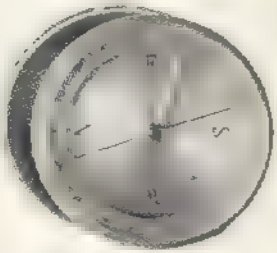


Fig 9145B

No. 1790 GERMAN POCKET COMPASSES

Size	inches	1	1½	1¾	2
Price, No. 1790, Brass Case, Card Dial	per dozen	2.00	3 00	4 00	4 80

No. 1723 HEAVY BRASS CASE POCKET COMPASSES

Size	inches	2	2½	2¾
Price, Brass Case, Silver Metal Dial, Agate Stop	per dozen	26 00	28 00	34.00
" No. 4201, Brass Case, Metal Dial	" "	24 00	26 00	30 00

WOOD CASE

Fig. 9145C

No. 1715

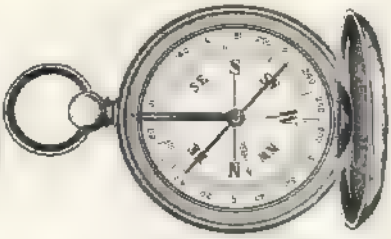


Fig. 9145D

No. 082

Fig. 9145E

WOOD CASE COMPASSES WITH COVERS

Price	No. 1734, Card Dial, 2⅛	inches,	Plain Needle	Automatic Stop				per dozen		11 20
"	" 1735, Metal " 2⅛	"	Jeweled "	"	"	"		"		14.70
"	" 1736, " " 2½	"	" "	"	"	"		"		17 00

No. 1736 shows Full Divisions on Dial.

No. 1715 WATCH CASE STYLE COMPASSES

Size	inches	1⅝	2	2½
Price, Nickel Plated, Jeweled Needle	per dozen	32 00	36 00	38 00

Has Automatic Stop and Full Divisions.

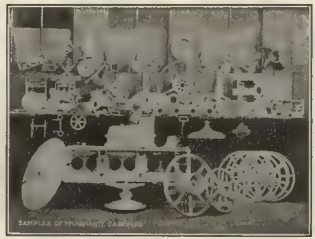
MARBLE'S HANDY COMPASSES

Price, No. 082, Revolving Dial, Agate Bearing	each	1 50
" " 182, Stationary "	"	1 25

McAdamite

THE STRONGEST LIGHT METAL

PATENTED
NOVEMBER 14TH, 1905
APRIL - 9TH, 1907
JULY - 9TH, 1907



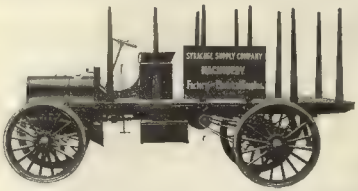
McAdamite

Tension	Compression	Transverse	Torsion	Sp.Gr.
44,250	126,000	87,200	60,300	3.10

SPECIALTY:—Automobile and Aeroplane Castings

UNITED STATES McADAMITE METAL COMPANY
18-28 RAPELYE STREET :: :: BROOKLYN, NEW YORK

PACIFIC COAST AGENCY—Standard Brass Casting Co., 3d and Franklin Sts., Oakland, Cal.
ST. LOUIS AGENCY—The Leading Brass & Metal Co., 2713 Hickory St., St. Louis, Mo.



Chase Motor Wagons

Selected by the
Big Ones Who Know

The illustration shows a Chase Wagon built for carrying long pieces of piping or lumber. Thirty foot lengths are easily carried on this wagon. The seat takes up very little space and the working parts are all readily accessible as in all other Chase Models.

No matter what you want to carry on the Chase, we can build a body to meet your needs. Probably have already done so for some of the thousand users of our wagons.

Let us send you *Facts* and *Figures* on delivery costs by Chase Wagons.

Chase Motor Truck Company

SYRACUSE Department C NEW YORK

Powerful Simple Strong Modern

The Buckeye Motor Wagon

BUILT FOR SERVICE

The result of exhaustive study and research by practical truckmen.

25 H. P., four cylinder vertical motor. Special type of selective transmission.
100" wheel base.
Capacity, 3,000 pounds.

No stripping of gears possible with our transmission. You can make no comparison until you have looked thoroughly into our product.

Write to-day for catalog. Live and responsible agents wanted.

The Buckeye Wagon & Motor Car Co.

30-36 NORTH CANAL STREET, DAYTON, OHIO

Hart-Kraft Business Wagons

The most reliable and economical delivery wagon offered for 1910

Actual Experience is Proof of Our Claim

Read the following condensed report of a Hart-Kraft Wagon which was operated from 22nd St., New York City, to Mt. Vernon, Pelham, New Rochelle and return DAILY. The wagon contained two men and the number of packages indicated by the deliveries. Gasoline figured at 15 cents per gallon; oil at 40 cents.

Total miles	71 days,	4014½	Total average one day,		56.5 miles
" deliveries	"	3175	" " "		46 deliveries
" gasoline used	"	317⅛ gals.	" " "		4½ gallons
" oil used	"	124 pts.	" " "		1¾ pints
" fuel cost	"	$53.83	" " "		$0.76

Fuel Per Mile for Whole Period:

12½ miles per gallon of gasoline — 37½ miles per pint of oil

The Hart-Kraft Wagon

Has Unit Power Plant, Magneto Ignition, Timken Bearings, Planetary Gearing, Multiple Disc Clutch, Double Opposed Motor, Water Cooled, Full Elliptic Springs, Double Chain Drive, Solid Tires.

All parts of the Power Plant are easily accessible from the Driver's Seat.

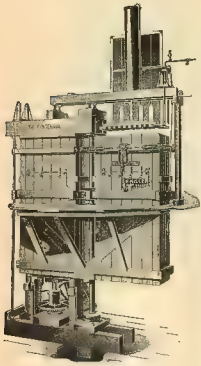
Special Bodies of Selected Design made to suit Customers.

Capacity, 1000 pounds.

HART-KRAFT MOTOR CO.
YORK, PENNA.

Circular Saw Mills

Double Box Cotton Press



In offering the Centennial Revolving Double Box Cotton Press and Steam Tramper to the cotton ginners, we feel that we are offering the strongest and most perfect Press and Steam Tramper now on the market. All the details of construction are such as to insure ease of manipulation and durability. The timbers of the top and bottom girders and bed sill on which the screw rests are extra heavy, and all other parts in proportion. The cross rails of the Press doors are of oak, securely bolted to the plank. The turntable is bolted to two heavy center joists. The Press doors are provided with the Eberhardt Patent Friction Relieving Door Fastening, made entirely of wrought and malleable iron which enables the operator to relieve the Press of all unnecessary strain caused by the cotton pressing against the side or ends of the Press doors, during the latter part of the baling process, while the shape of the bale is not affected thereby in the least. The friction driving wheel is heavy and extra large. The Steam Tramper is run down and back up by steam, thus dispensing with the heavy and cumbersome weights which are never positive in action. The heads of the cylinder are provided with the Eberhardt Pneumatic Cushion, which makes it impossible to break or knock out the heads by turning on steam rapidly. We can also furnish this Press belt driven when desired.

Cotton Gin Feeder and Condenser

For durability, excellence of work, lightness of draft, cleaning seed and making fine sample this Gin is unsurpassed. Adjustable Seed Board, Double Brush Belts, Brushes filled with best quality of Bristles, perfectly balanced, and so constructed they cannot fly to pieces.

The Centennial will do more work per day, makes finer sample, better yield and will last longer than any Gin made. Years of experience enable us to furnish a Gin Feeder and Condenser second to none made. Every particle of material is selected with great care and no pains spared to furnish the very best outfit on the market.

Prices furnished on receipt of inquiries.

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

MINERS' LAMPS

FROSTBURG

Per dozen $1.50

STAR, NO. 3

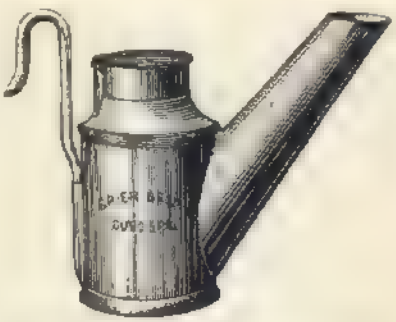
Per dozen $2.00

STAR, NO. 3, WITH CUP

Per dozen $2.50

STAR DRIVER, NO. 5

Per dozen $2.50



DRIVER, NO. 1, SINGLE SPOUT

Per dozen $4.25

DRIVER, NO 1, DOUBLE SPOUT

Per dozen $4.50

MINERS' WICK

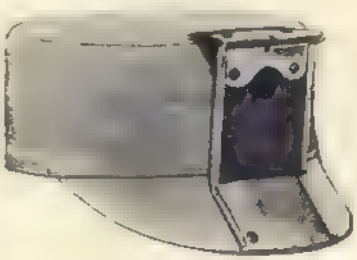
TIOGA

Per pound 40

MINERS' CAPS

NO. 204-12

Brown Duck. Per dozen $2.50



NO. 200-9

White Duck Per dozen $3.25

ANVILS

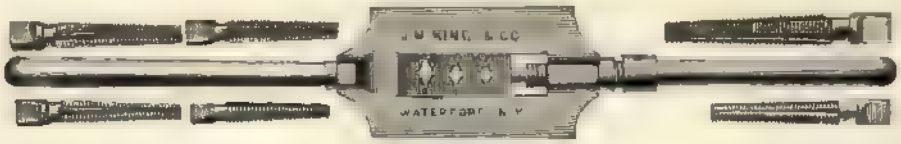
SWEDISH, SOLID STEEL

85 lbs. and heavier			.18	per	lb.	base,	no	extra	
65 " to 84 lbs			.75	"	"	extra	over	base	
45 " " 64 "			1.00	"	"	"	"	"	
25 " " 44 "			4.00	"	"	"	"	"	
10 " " 24 "			6.50	"	"	"	"	"	
"Clip-horn" Pattern			.25	"	"	"	"	"	

BLACKSMITHS' BELLOWS

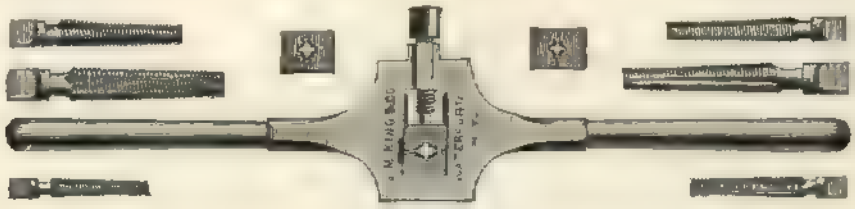
32 inch	Each	$14.00
34 "	"	16.00
36 "	"	18.00
38 "	"	20.00
40 "	"	23.00
42 "	"	27.00

STOCKS AND DIES



NO. 55 TO 23

No.																						Per set.
55	Cuts	5/16	in.	to	1/8	in.	Right	Hand,	18,	24	and	32	Threads	to	the	inch.	4	Taps	and	3	Sets	of	Dies	$2 50
41	"	1/2	"	"	1/4	"	"	"	16,	20	"	26	"	"	"	"	6	"	"	3	"	"	"	3.25
37	"	5/8	"	"	3/16	"	"	"	14,	18	"	22	"	"	"	"	6	"	"	3	"	"	"	4.25
34	"	3/4	"	"	5/16	"	"	"	10,	12	"	16	"	"	"	"	3	"	"	3	"	"	"	4.50
23	"	1	"	"	3/8	"	"	"	9,	10	"	14	"	"	"	"	3	"	"	3	"	"	"	5.00



NO. 60

No.																							Per set.
60	Cuts	3/4	in.	to	1/2	in.	Right	Hand,	10,	12,	14	and	18	Threads	to	the	inch.	6	Taps	and	4	pair	of	Dies	$6.50

NEW EASY BOLT CLIPPERS

No.																								Each
0	New	Easy	Bolt	Clipper,	for	5/16	inch	Bolts,	length	18	inches													$3 75
1	"	"	"	"	"	3/8	"	"	"	24	"													5 00
2	"	"	"	"	"	1/2	"	"	"	30	"													7.00

ROLLING MILL SCALES

WITH RACK PLATFORM, BRASS BEAM WITH SLIDING POISE AND SET SCREW

Extra heavy scale and designed for rough usage.

Between the lower platform and the rack platform, which is removable, are placed large rubber springs which act for a cushion which relieve the bearings of the jar, also protecting the scale parts from sudden strain.

Face of pillar protected part way with iron plate.

Front axle vibratory, and has handle for convenience in moving about.

Platform covered with steel plate and iron bars with short horns to pile up bars of iron.

Furnished with drop lever when so ordered.

FIG. 4891

No.	Capacity, Pounds	Platform, Inches	List Price
1416	2,500 x ⅛	25 x 33	$125.00
1418	4,000 x ⅛	31 x 40	160.00
1420	6,000 x 1	31 x 40	185.00
1422	8,000 x 1	31 x 40	210.00
1424	10,000 x 1	31 x 40	225.00
1426	12,000 x 1	31 x 40	240.00

MINE OR TIPPLE SCALES

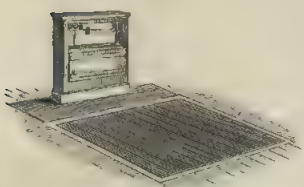


FIG. 4892.

These scales are designed for weighing one small car of coal or ore at the mines.

Can be equipped with the Automatic Quick Weighing Outfit.

No. 2145 will permit two tracks on platform parallel to beam.

Full capacity beams for 2 to 5 tons capacity, extra, $20.00; 6 to 10 tons capacity, extra, $30.00.

The sizes of platforms of these scales may be varied somewhat from the given dimensions and without increasing cost of scale.

Prices are exclusive of lumber and foundation, which are to be furnished by the purchaser.

No.	Capacity, Tons	Platform	List Price, Single Beam	List Price, Double Beam
2166	3	4 x 4 ft. 1⅝ in.	$155.00	$163 50
2190	3	5 x 5 " ⅞ "	155.00	163.50
2145	4	4 x 10 " 1⅛ "	170.00	180 00
2188	4	6 x 4 " 11½ "	170.00	180 00
2162	5	7 x 4 " 9½ "	185.00	195 00
2184	6	6 x 4 " 11½ "	205.00	215.00
2074	6	8 x 6 " ⅝ "	215.00	225.00
2072	8	8 x 6 " ⅝ "	250.00	260 00
2156	10	10 x 4 " 1⅛ "	280.00	290 00

WAGON AND HAY SCALES

FIG. 4893

The sizes of platform of these scales may be varied somewhat from dimensions given without increasing the cost of the scales.

Trusses for platform timbers are furnished with all scales having platform 18 feet or longer, except Nos. 1836 and 2100.

We furnish extensions to carry the beams unusual distances from the platform at additional cost.

All prices are exclusive of the cost of timber and foundation, which is to be paid by purchaser.

Suspension Hay Scales furnished to order when required.

Number	Capacity Tons	Size of Platform	Distance from Edge of Platform to Beam Rod	Price Single Beam	Price Double Beam
1800	20	22 x 10 ft. 8½ in.	2 ft. 1 in.	570.00	585.00
1836	20	20 x 7 ft. 9½ in.	4 ft. 1⅛ in.	520.00	535.00
1922	20	16 x 7 ft. 10 in.	1 ft. 10½ in.	450.00	465.00
1802	15	22 x 10 ft. 3⅛ in.	2 ft. 1 in.	440.00	455.00
1838	15	18 x 8 ft. 8 in.	4 ft. 5½ in.	420.00	435.00
1924	15	14 x 8 ft. 4½ in.	2 ft. 1 in.	390.00	405.00
1806	10	22 x 10 ft. 3⅛ in.	2 ft. 1 in.	365.00	380.00
1843	10	18 x 8 ft. 3 in.	4 ft. 5½ in.	350.00	365.00
1928	10	14 x 8 ft. 4½ in.	2 ft. ⅝ in.	300.00	315.00
1845	8	20 x 7 ft. 9½ in.	4 ft. 1⅛ in.	315.00	330.00
1930	8	16 x 7 ft. 10 in.	1 ft. 10½ in.	275.00	290.00
1846	6	18 x 8 ft. 3 in.	4 ft. 5½ in.	275.00	290.00
2100	6	22 x 8 ft.	2 ft. 9 in.	250.00	265.00
2110	6	14 x 8 ft.	2 ft. 2½ in.	225.00	240.00
2112	5	14 x 8 ft.	2 ft. 2½ in.	200.00	210.00
2114	4	14 x 8 ft.	2 ft. 2½ in.	170.00	180.00

DORMANT WAREHOUSE SCALES

WITH TWO TALL IRON PILLAR OUTFIT

Double brass beam, sliding poise and lower poise with set screw. Double beam is convenient to take care of trucks or cases.

Short iron pillar outfit furnished if desired at corresponding price.

When ordered with scale, a full capacity beam to dispense with loose weights will be furnished at an additional list price of $20.00.

Furnished with set of marginal irons to protect wood floor surrounding platform.

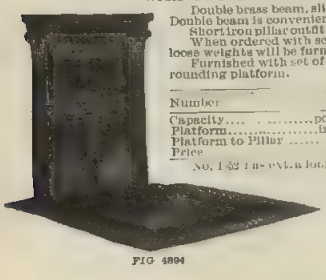


FIG 4894

Number	1046	1048	1050	5054	1052
Capacity.....pounds	5000 x ½	3500 x ½	2500 x ½	1500 x ½	3500 x ½
Platform.....inches	48 x 48	42 x 44	46 x 37	42 x 30	42 x 44
Platform to Pillar..... "	23	12	12	84	20
Price each	170.00	125 00	105 00	100 00	135 00

No. 1052 has extra long neck.

Mitchell

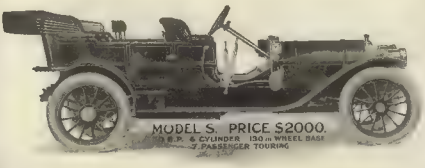
The *Mitchell* has earned it's way into the hearts of the people by the *best service* of which an automobile is capable.

Of the thousands of owners you can't find one who doesn't *swear by the car*

It's the low-cost high-class car

Silent as the Foot of Time

The car you ought to have at the price you ought to pay



MODEL S. PRICE $2000.
30 H. P. 4 CYLINDER 130 in. WHEEL BASE
7 PASSENGER TOURING

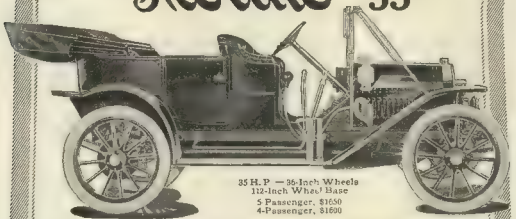
Mitchell-Lewis Motor Co.
SUCCESSOR TO
Mitchell Motor Car Co. and Mitchell & Lewis Co. LTD.
Racine, Wis. U. S. A.

Mobiloil
the oil that lubricates most
the oil that lubricates most
GARGOYLE
Mobiloil
"A"
(Medium body)
For cylinders of water-cooled gasoline engines. It holds its body under EXTREME HEAT, and feeds readily in mechanical and gravity oilers. For the general lubrication of electric vehicles.
VACUUM OIL COMPANY
Rochester, U.S.A.

MOLINE

HEADQUARTERS

Moline "35"



35 H. P. —36-Inch Wheels
112-Inch Wheel Base
5 Passenger, $1650
4-Passenger, $1600

A CAR distinguished by its unprecedented performance in the severest reliability and endurance contest ever run—the 1910 Glidden Tour—covering 2,852 miles over indescribably bad roads.

In addition to winning the Chicago Trophy, the winning Moline ***made by far the best record of any car in the entire tour,*** regardless of entry classification, size, power or price.

Much of the credit of this unequalled performance is due to the remarkable efficiency of the Moline's new

4 x 6 Long Stroke Motor

a feature that has created widespread comment because so unlooked for in a modest priced car a feature not obtainable in this country excepting in very rare instances in high priced cars, but which, owing to its many decided advantages, is being quite generally adopted in Europe.

The Moline's exhibition of sustained power and flexibility, especially under the strenuous road conditions; its exceptional smooth and noiseless operation afforded by the long stroke motor, have placed it decidedly in the lead of all cars in its class.

May we send you Catalog No. 37, fully describing this efficient motor and the several other distinctive features of the 1911 Models.

Moline Automobile Co., 37 Keokuk St., E. Moline, Ill.

WHY DID THE GREAT Chadwick SIX

WIN the GREAT 202½-MILE ROAD RACE in PHILADELPHIA, OCTOBER 8th, and WHAT DOES the VICTORY SIGNIFY?

That the CHADWICK car is superior in design, construction, speed and endurance.

To win this trying race, it was necessary for a car to represent the highest type of engineering ability, and to be of the finest material and workmanship; for while speed was an essential, reliability was vital.

While no more severe test has ever been imposed upon automobiles, we sincerely regret that a technical examination of the cars, showing their condition after the race, was not a part of the contest, for it would have emphasized the superiority of CHADWICK design and construction, as the majority of cars running at the finish were having mechanical troubles, and were barely struggling for an existence.

Proof of the severity of the race is the fact that the CHADWICK was the only car of its class running after the fifteenth lap. Of the thirty-two cars which had started in this grinding contest, about two-thirds had quit before the finish.

During the process of elimination the CHADWICK never faltered and the only stops were for tire changes, as no water or fuel supply was required, showing that CHADWICK engines do not overheat or use much gasoline.

One of the most astonishing showings was that made by the high-priced, high-powered cars—those considered among the best of American automobile manufacture. These cars broke crankshafts, cylinders and other important parts and were eliminated by the time three-fifths of the race had been run.

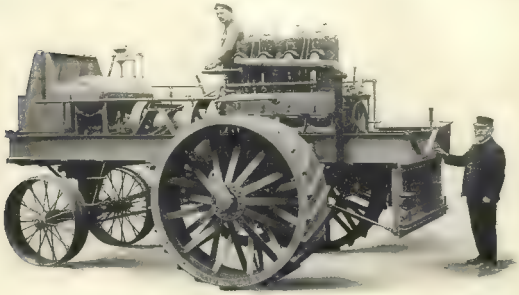
The cars defeated were a Lozier, two Appersons, four Benz, three Simplex, two Nationals, and over twenty others.

Not only was this victory one for the CHADWICK car, but for six cylinders and chain drive, for all the important road races of recent date have shown that six cylinders and chain drive are the only combination for speed and endurance. Here again does the CHADWICK excel, for the chains run in oil, are protected from dust and mud and are absolutely silent.

The CHADWICK not only broke the course record by many minutes, but it also made the fastest lap. (The lap record, by mistake of the timers, was awarded to another car, but later the error was discovered and the CHADWICK given the credit it deserved.)

A perfect-score record in a gruelling contest which made competing cars quit because the strain was more than their engines and other parts could stand, must convince even the most skeptical that the CHADWICK won because it is designed right and built regardless of cost of material and construction. This is because the CHADWICK policy and motto has always been: "The best is none too good."
Send for our 1911 Advance Specification Sheets and full information.

Chadwick Engineering Works, POTTSTOWN PENNSYLVANIA



THIS MONSTER MOTOR CAR, THE MORRIS TRACTOR, with 4 cylinders, 8x10 inches, designed for plowing, hauling, road-making, threshing, etc., is equipped with the

BRIGGS MAGNETO

—the only magneto that could start it satisfactorily. Read Mr. Morris's letter:

RACINE, WIS., July 10, 1910.

BRIGGS MANUFACTURING CO., Elkhart, Indiana

Gentlemen: Permit us to congratulate you on the efficiency of the Briggs Magneto. We have tried several other leading makes of magnetos, each supposed to produce a fat, hot spark at low speeds, and all of them failed to do the work properly except the Briggs.

It is the only one which always starts the engine at the first trial, and thus removes for us one of the most serious drawbacks to large motors for agricultural uses, viz., the difficulty of starting. And it never fails to ignite the mixture at any speed. In mechanical construction, particularly of the circuit breaker, we believe the Briggs Magneto is superior to all others, and we shall use it exclusively on all the Morris Gasoline Motors we are building for one of the world's largest manufacturers of engines and threshing machines.

Very truly yours,

GEORGE W. MORRIS.

All others failed but the Briggs Magneto of **verified efficiency** and **durability.** That is why we can **reasonably guarantee** every Briggs Magneto and Coil to **satisfy** till the car equipped with them goes to the scrap heap. All repairs and replacements, if any, for **any** reason, at **our** expense—a **real** guarantee, **justified** by the **best** magneto.

Briggs Manufacturing Company

ELKHART, INDIANA

MOUSE AND RAT TRAPS

FRENCH PATTERN

These Traps are Well and Carefully put Together, Wire Closely and Firmly Woven, impossible for Rat or Mouse to escape when caught.

No. 5	**Mouse Traps**	Per dozen	$3.50
" 3	**Rat** " Family Size " "		4.00

In Bulk.

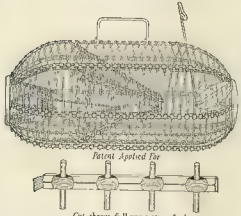
"WINCHESTER," WIRE CLOTH

Made of No. 19 2½ Mesh Galvanized Cellar Window Wire. An Exceptionally Strong and Durable Trap.

"Winchester"	**Mouse Traps**	Per dozen	$4.00
"	**Rat** " "	" "	7.00

In Bulk.

MOUSE AND RAT TRAPS



Patent Applied For

Cut shows full size section of rib.

"HOLD-EM"

Made of Sheet Steel and Rigid Coppered Wire. The Double Metal Rib makes escape impossible. The Safety Door can be opened to let out one rat at a time without danger of being bitten. Each Trap Lacquered

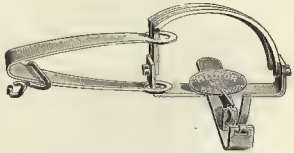
"Hold-Em"	**Mouse Traps,** 8⅝ inches, Per dozen	$4.50
" No. 1	**Rat** " 15⅛ inches, Per dozen	7.00

Rat Traps, half dozen in a Crate; Mouse Traps, two dozen.

GAME TRAPS

BLAKE & LAMB OR JUMPER

GAME TRAPS



"HECTOR," WITHOUT CHAIN

SINGLE SPRING

No. 0	**Rat,**	3⅝ inch Jaw	Per dozen	$3.25
" 1	**Muskrat,**	4 " "	" "	3.75
" 1½	**Mink,**	4⅞ " "	" "	6.00

DOUBLE SPRING

No. 2	**Fox,** 4⅞ inch Jaw	Per dozen	$9.00

"HECTOR," WITH CHAIN

SINGLE SPRING

No. 0	**Rat,**	3⅝ inch Jaw	Per dozen	$4.25
" 1	**Muskrat,**	4 " "	" "	5.00
" 1½	**Mink,**	4⅞ " "	" "	7.00

DOUBLE SPRING

No. 2	**Fox,** 4⅞ inch Jaw	Per dozen	$10.50

BLAKE & LAMB OR JUMPER, WITHOUT CHAIN

No. 0	**Rat,**	4⅜ inch Jaw	Per dozen	$3.25
" 1	**Muskrat,**	4⅞ " "	" "	3.75
" 1½	**Mink,**	4⅞ " "	" "	6.00

BLAKE & LAMB OR JUMPER, WITH CHAIN

No. 0	**Rat,**	4⅜ inch Jaw	Per dozen	$4.25
" 1	**Muskrat,**	4⅞ " "	" "	5.00
" 1½	**Mink,**	4⅞ " "	" "	7.50

Game Traps, in Bulk.

MOLE TRAPS

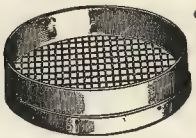
"REDDICK"

"Reddick," Double Tinned ... Per dozen $12.00
Half dozen in a Crate.

"OLMSTED"

"Olmsted," No. 2, Painted ... Per dozen $25 00
One in a Box.

COAL SIEVES



WOOD RIM, ROUND

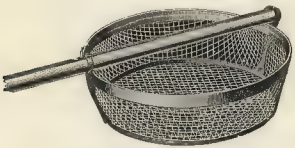
Diameter	Ash Rim	Oak Rim
All 12 inches	Per dozen $1.80	2.80
" 14 "	" " 2.20	3.20
12 and 14 in., assorted	" " 2.00	3.00
With Handles, add	" " .80	.80

One dozen in a Bundle.

WOOD RIM, SQUARE, PAINTED

3 in a Nest	10x12 / 12x14 / 14x16	inches	Per dozen $2.50
2 in a Nest	12x14 / 14x16	inches	" " 3.00
With Handles, add			" " .80

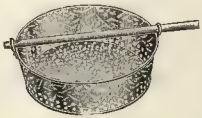
One dozen Nests in a Bundle.



METALLIC

Frame of Sheet Metal and Sieve of Wire Cloth, Stained Handles.

Metallic, All Japanned, with Handles. Per dozen $4.00
Extra Handles ... " " .80
Three dozen in a Crate.



CONVEX

Japanned Sheet Iron, Convex Bottom, Stained Handles.

Convex, Japanned, with Handles Per dozen $4.00
" Galvanized, " " " " 5.50
Extra Handles ... " " .80
Three dozen in a Crate.

FLUTES

No. 9210.

International or New Standard Pitch is LOW PITCH.
American or Concert Pitch is HIGH PITCH.

CONCERT FLUTES.

KEY OF D. HIGH PITCH.

American Manufacture.

No. 9100 1 key, Cocoa, German silver trimmed.....Each $5.35
No. 9102 1 key, Cocoa, with tuning slide, German silver trimmed .....Each 7.35

NOTE—The above Flutes are of American manufacture and not liable to crack or check.

In Pasteboard Boxes.

No. 9203 8 keys, Grenadilla, with tuning slide, cork joints, German silver caps and trimmings.....Each $11.10
No. 9204 8 keys, Grenadilla, with tuning slide, cork joints, German silver caps and trimmings and embouchure Each 12.40
No. 9207 8 keys, Grenadilla, with tuning slide, cork joints, German silver head joint.....Each 13.20
No. 962 8 keys, Grenadilla, cell-head head, with German silver lip plate, cork joints . . . . . Each 15.75
No. 968 8 keys, Grenadilla, with tuning slide, cork joints, German silver embouchure and finger holes, with swab and grease box, in fine rosewood case.....Each 25.40

FINE IMITATIONS OF MEYER.

In Morocco Velvet Lined Cases, Joint Caps, Grease Box, Swab, Pads and Screw Driver.

No. 9205 8 keys, Grenadilla, with tuning slide, cork joints, ...Each $17.75
No. 9206 8 keys, Grenadilla, with tuning slide, cork joints, *ivory head .....Each 37.75
No. 9209 10 keys, Grenadilla, with tuning slide, cork joints, ...Each 25.25
No. 9210 10 keys, Grenadilla, with tuning slide, cork joints *ivory head .....Each 46.25
No. 9211 11 keys, Grenadilla, with tuning slide, cork joints, *ivory head .....Each 48.50
No. 9212 13 keys, Grenadilla, with tuning slide, cork joints, ...Each 30 50
No. 9213 13 keys, Grenadilla, with tuning slide, cork joints, *ivory head .....Each 50.50

LOW PITCH.

No. 91000 8 keys, Grenadilla, with tuning slide, cork joints, ...Each $18.00
No. 91002 8 keys, Grenadilla, with tuning slide, cork joints, *ivory head . . . . . Each 38 00
No. 91012 13 keys, Grenadilla, with tuning slide, cork joints, ...Each 30 50
No. 91013 13 keys, Grenadilla, with tuning slide cork joints, *ivory head . . . . . Each 50 50

KEY OF D. HIGH PITCH.

Cylindrical Bore, Covered Finger Holes.

In Morocco Velvet Lined Cases.

No. 910 Grenadilla, German silver keys.....Each $60.00

LOW PITCH.

No. 911 Grenadilla, German silver keys.....Each $60.00

GENUINE H. F. MEYER, HANOVER.

HIGH PITCH.

No 9218 11 German silver keys, Grenadilla, with tuning slide, cork joints, ivory head, finest Morocco case, etc. .....Each $197 25

*NOTE—Made of Seasoned Ivory, Finished and Perfected in our own factory.

PICCOLOS

Nos. 952 953.

International or New Standard Pitch is LOW PITCH.
American or Concert Pitch is HIGH PITCH.

HIGH PITCH.

In Pasteboard Cases.

No. 928 Key of D, Grenadilla, with tuning slide, 4 keys, German silver trimmed.....Each $ 3.50
No. 929 Key of Eb, Grenadilla, with tuning slide, 4 keys, German silver trimmed.....Each 3.50
No. 930 Key of D, Grenadilla, with tuning slide, 4 keys, German silver trimmed, with cork joints .....Each 3.75
No. 931 Key of Eb, Grenadilla, with tuning slide, 4 keys, German silver trimmed, cork joints .....Each 3.75
No. 932 Key of D, Grenadilla, with tuning slide, 6 keys, German silver trimmed.....Each 4.10
No. 933 Key of Eb, Grenadilla, with tuning slide, 6 keys, German silver trimmed.....Each 4.10
No. 934 Key of D, Grenadilla, with tuning slide, 6 keys German silver trimmed, cork joints.....Each 4 40
No. 935 Key of Eb, Grenadilla, with tuning slide, 6 keys German silver trimmed, cork joints .....Each 4 40
No. 916 Key of D, Grenadilla, German silver head and slide joint, 6 keys, German silver trimmed, cork joints...Each 5.75
No. 917 Key of Eb, Grenadilla, German silver head and slide joint, 6 keys, German silver trimmed, cork joints. .Each 5.75
No. 926 Key of D, Grenadilla, *ivory head, with tuning slide, 6 keys, German silver trimmed, cork joints..Each 11 50
No. 937 Key of Eb, Grenadilla, *ivory head, with tuning slide, 6 keys, German silver trimmed, cork joints..Each 11.50

CYLINDRICAL BORE.

Covered Finger Holes. In Fine Cases.

No. 980 Key of D, Grenadilla, 8 keys, German silver trimmed, cork joints.....Each $20.25
No 982 Key of Eb, Grenadilla, 6 keys, German silver trimmed, cork joints.....Each 20.25

MEYER PATTERNS.

In Fine Cases.

No 952 Key of D, Grenadilla, *ivory head, 6 keys, with slide, cork joints, German silver trimmed.....Each $14.50
No 953 Key of Eb, Grenadilla, *ivory head, 6 keys, with slide, cork joints, German silver trimmed..... Each 14 50

SUPERIOR QUALITY.

In Fine Leather Covered Velvet Lined Cases, Joint Caps, Swab, Grease Box and Screw Driver.

LOW PITCH.

No. 93042 Key of D, 6 keys, Grenadilla, *ivory head, German silver spring plates, cork joints..... .....Each $24 75
No. 93044 Key of Eb, 6 keys, Grenadilla *ivory head German silver spring plates, cork joints... . Each 24 75

GENUINE H. F. MEYER, HANOVER.

HIGH PITCH.

In Fine Cases.

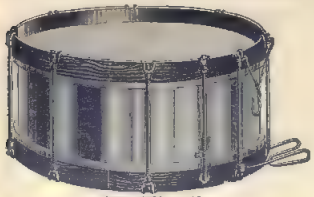
No. 954 Key of D Grenadilla, *ivory head, 6 keys with slide, cork joints, German silver trimmed.....Each $60.50
No 955 Key of Eb, Grenadilla, *ivory head, 6 keys with slide, cork joints, German silver trimmed.....Each 60.50

*NOTE—Made of Seasoned Ivory, Finished and Perfected in our own factory.

COMPLY WITH THE LAW!
The Neverout
TRADE MARK
PATENT
LICENSE BRACKET
GUARANTEES YOU AGAINST ARREST.
PATENTED APR. 7 1908 OTHER PATENTS PENDING
YOU MUST
Light your License Tag and hold your Tags, rigidly as required by the new law of New York State.
Pennsylvania, Maryland and other States have similar laws
The Neverout Rear and Forward License Brackets comply with all the laws
Write Today for Full Particulars
Rose Manufacturing Company
911 Arch Street - - - PHILADELPHIA
DEALERS: GET OUR SPECIAL PROPOSITION

SNARE DRUMS

These Drums are positively the Best made and are fully guaranteed. Those listed are our own make and are the product of the largest musical instrument factory in existence. They contain certain features (covered by letters patent, which are not found in other makes, although they are closely imitated on all sides. We use only the very best material obtainable and hoops and flesh hoops are properly fitted, so that there is hardly a possible chance to warp or get out of shape. They are used and endorsed by the World's Greatest Concert Bands and Leading Professional Drummers, consequently their reputation is achieved solely on their intrinsic merits.

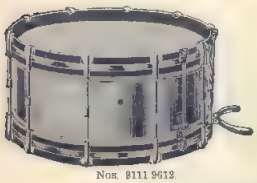


Nos. 91[illegible]15

BAND DRUMS—PRUSSIAN PATTERN.

MAPLE HOOPS, EBONIZED OR IMITATION ROSEWOOD FINISH. WHITE METAL PLATED RODS AND TRIMMINGS. :: :: FINE FINISHED ROSEWOOD STICKS. RAWHIDE SNARES. :: :: ::

No. 91[illegible]½ 14-inch Maple Shell, 6 inches high, 7 rods, 6 snares, 1 calfskin head . . Each $17 00
No. 9[illegible] 16-inch Maple Shell, 6 inches high, 8 rods, 8 rawhide snares, 2 calfskin heads Each 13 50
No. 9[illegible] 16-inch Brass Shell, 8 inches high, 8 rods, 8 rawhide snares, 2 calfskin heads Each 18 00
No. 9[illegible] 16-inch Brass Shell, nickel-plated, same description as No. 9[illegible] Each 20 25

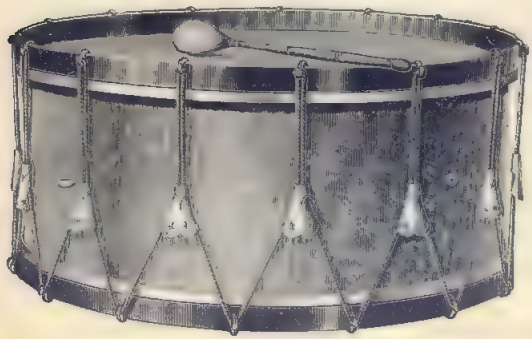


Nos. 9111 9612

"THE NEW DEPARTURE" BAND DRUMS

WITH DOUBLE-ACTING RODS AND FOLDING KNEE REST. :: FINE POLISHED ROSEWOOD STICKS. :: RODS FINISHED WITH FLAT HOOK. :: DO NOT PROJECT OVER THE TOP OF HOOPS. :: MAPLE HOOPS EBONIZED OR IMITATION ROSEWOOD FINISH. :: ::

No. 9111 16-inch Maple Shell, 6 inches high, 8 rods, brass hooks and trimmings 8 rawhide snares, 2 calfskin heads Each $22 25
No. 9612 16-inch Nickel-plated Shell, 6 inches high, 8 N. P. rods, N. P hooks and trimmings 8 rawhide snares, 2 calfskin heads Each 24 75



BASS DRUMS
REGULATION PATTERN

HOOPS AND FLESH HOOPS PERFECTLY FITTED.

Maple Hoops, Ebonized or Imitation Rosewood Finish, Italian Hemp Cord, Improved Pattern Cord Hooks

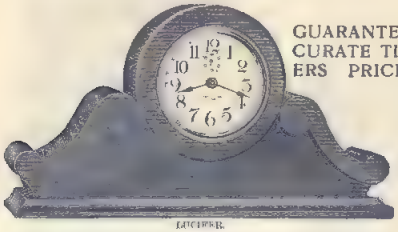
Cord can be taken off without removing braces

With Chamois Skin Head Stick

Bird's Eye Maple Shell No.	Mahogany Shell No.		
Nos. 91110	93110	24-inch Shell, 10 inches high 11 braces, 2 calfskin heads	Each $31 00
Nos. 91110½	93110½	24 inch Shell, same description as above, with 1 calfskin and 1 sheepskin head.	Each 28 00
Nos. 91210	93210	26-inch Shell, 11 inches high, 12 braces, 2 calfskin heads	Each 33 00
Nos. 91210½	93210½	26-inch Shell, same description as above, with 1 calfskin and 1 sheepskin head	Each 31 00
Nos. 91310	93310	28-inch Shell, 12 inches high, 13 braces, 2 calfskin heads	Each 36 00
Nos. 91310½	93310½	28-inch Shell, same description as above, with 1 calfskin and 1 sheepskin head.	Each 33 00
Nos. 91410	93410	30-inch Shell, 12 inches high, 14 braces, 2 calfskin heads	Each 39 00
Nos. 91410½	93410½	30-inch Shell same description as above, with 1 calfskin and 1 sheepskin head	Each 35 00
Nos. 91510	93510	32-inch Shell, 12 inches high, 15 braces, 2 calfskin heads	Each 42 50
Nos. 91510½	93510½	32-inch Shell same description as above, with 1 calfskin and 1 sheepskin head	Each 39 00

NEW HAVEN CLOCK CO.'S FINE CABINET CLOCKS

GUARANTEED ACCURATE TIMEKEEPERS PRICES EACH.



LUCIFER.

Solid mahogany case. Height, 8¼ inches; width, 10 inches. 3-inch porcelain dial. Eight-day time movement.

No. 5973 Each $9.70

AURORA

Solid mahogany, height 13½ inches, width 8¼ inches, 6 inch porcelain dial, French cast sash, beveled glass, eight-day half-hour strike, cathedral gong.

No. 5984 Each $13.55

OLEAN.

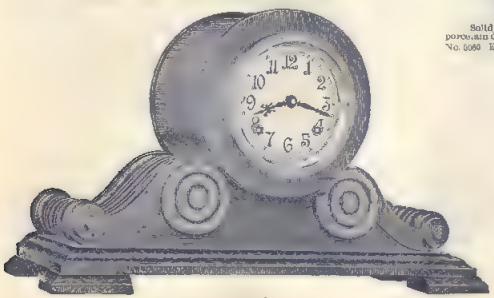
Solid mahogany highly polished case. Height, 11¼ inches, width, 10¼ inches 6-inch porcelain dial. French cast sash, beveled glass. Eight-day half-hour strike, cathedral gong.

No. 5985 Each $21.35

LOMBARD.

Solid mahogany case. Height, 7¾ inches; width, 6 inches. 3-inch porcelain dial. Eight day time movement.

No. 5990 Each $8.70



OLYMPUS

Solid mahogany highly polished case. Height, 11 inches, width 18½ inches. 6-inch porcelain dial. French cast sash, beveled glass. Eight-day, half-hour strike, cathedral gong.

No. 5987 Each $27.10

LORNE.

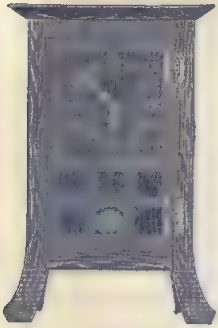
Solid mahogany case. Height, 11½ inches; width, 10 inches. 5-inch dial. Eight day, half-hour strike, cathedral gong.

No. 5988 Each $11.70

New Haven Clock Co.'s Fine Mission Clocks

Guaranteed Accurate Timekeepers

Prices Each.



SAN PEDRO

Solid Oak, Flemish finish, height 19 inches, width 12⅝ inches, 6 inch wood dial, cast numerals and fancy brass hands, eight day half-hour strike, cathedral gong

No. 5989 Each $7.75

LOS ALAMOS

Solid Oak, Flemish finish, height 14¼ inches, width 11⅝ inches, 6 inch wood dial, cast numerals and fancy brass hands, eight-day half-hour strike, cathedral gong

No. 5990 Each $7.15

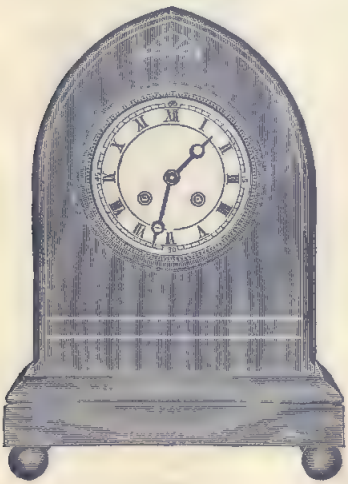
SAN LUIS

Solid Oak, Flemish finish, height 20 inches, width 13 inches, 6 inch wood dial, white numerals on background of artistic color, fancy brass hands, eight-day half-hour strike, cathedral gong.

No. 5991 Each $8.70

New Haven Clock Co.'s Fine Cabinet (English) Clocks

Guaranteed Accurate Timekeepers



PEARY

Highly polished, "Marquetry Inlaid", height 13 inches, width 9¾ inches, 5 inch porcelain dial, French cast sash, beveled bowed glass, eight-day half-hour strike, cathedral gong.

No. 5992. Antique Oak. Each $25.15
No. 5993. Mahogany. " 26.15

PACOLET

Mahogany "Marquetry Inlaid", highly polished, height 12½ inches, width 10 inches, 7 inch porcelain dial, French cast sash, beveled bowed glass, eight-day half-hour strike, cathedral gong.

No. 5994 Each $32.80

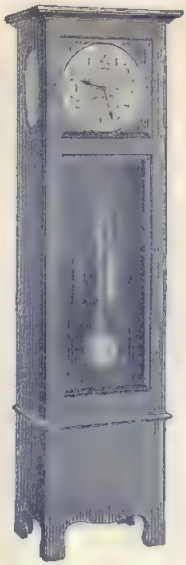
NEW HAVEN CLOCK CO.'S FINE MISSION AND HALL CLOCKS

GUARANTEED ACCURATE TIMEKEEPERS. PRICES EACH.

DUTCH No. 20

Solid oak, flemish finish. Eight-day, weight, half-hour strike, cathedral gong movement. 12-inch wood dial, cast hands and numerals. Height, 78 inches; width, 18⅜ inches.

No. 5789 Each.....$58.00



BROOKSDALE

Antique oak or mahogany, highly polished. Eight-day, weight; half-hour strike, cathedral gong movement. Silver etched 12-inch dial. Height, 72½ inches width, 20½ inches.

No. 5790 Each. .. $106.35

WILMINGTON

Antique oak or mahogany with gilt top ornaments highly polished. Eight-day, weight, half-hour strike cathedral gong movement. Etched silver 12-inch dial. Height, 91 inches; width, 21¾ inches.

No. 5791 Each.... ..... $100.70

ARLINGTON

Solid mahogany, highly polished. Eight-day, weight, half-hour strike, cathedral gong movement. Etched metal 12-inch dial. Height, 90½ inches; width, 21 inches.

No. 5792 Each $100.70

SHEFFIELD

SHEFFIELD

Solid mahogany, highly polished. Eight-day, weight, half-hour strike, cathedral gong movement. Etched metal 12-inch dial. Height, 90½ inches; width 21⅝ inches.

No. 5793 Each . . $100.70

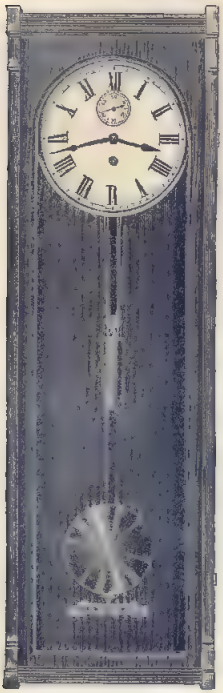
SHERBROOKE

Antique oak or mahogany with gilt top ornaments, highly polished. Eight-day, weight, half-hour strike, cathedral gong movement. Height, 93 inches; width, 22 inches. Etched 12-inch silver dial.

No. 5794 Each $212.70

SETH THOMAS CLOCK CO.'S FINE WEIGHT REGULATORS

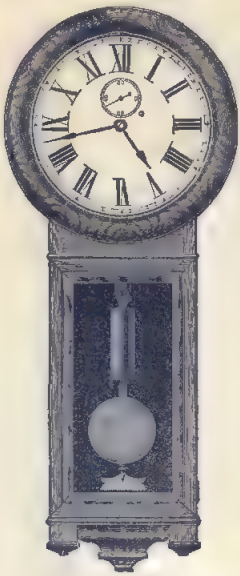
GUARANTEED ACCURATE TIMEKEEPERS. PRICES EACH



REGULATOR No 11

Mahogany and golden oak. Eight day, weight, time, beats seconds, large steel pinion movement with polished plates, Graham dead beat escapement, and maintaining power. Wood rod, brass-covered zinc ball. 12-inch dial. Height, 58 inches.

No. 5789 Each ... $100.00



REGULATOR No. 2

A standard small regulator for railroads, schools, fire departments, offices, etc Cherry, mahogany finish, oak and walnut veneer, polished Light day, weight, time, movement has strong well-finished plates, and is secured to an iron bracket, pendulum is suspended from same, Graham dead-beat escapement, wood rod, brass covered zinc ball, eighty beats to the minute. Has maintaining power. 12-inch dial. Height, 34 inches

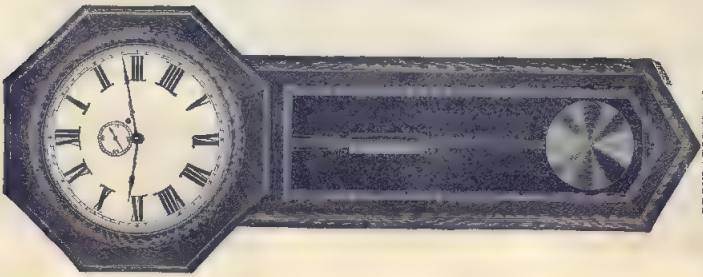
No. 5786 Each $32.70

30-DAY OFFICE

Double springs, time only, fine hand carved cabinet, old oak case. 12-inch dial. Height, 42 inches. An accurate time-piece, requiring winding but once a month.

No. 5797 Each $28 70

BEST CLOCKS ON THE MARKET AT EXTREMELY LOW PRICES
ALL ORDERS FILLED SAME DAY RECEIVED
WE AIM TO PLEASE OUR CUSTOMERS AT ALL TIMES



REGULATOR No. 18

Mahogany and old oak veneer, polished Eight-day, weight, time, beats seconds, movement has Graham pendulum, hung on agate planes, wood rod, brass covered zinc ball, brass weight 14 inch dial Height, 54 inches.

No. 5796 Each $53 35

NEW HAVEN CLOCK CO.'S FINE REGULATORS

GUARANTEED ACCURATE TIMEKEEPERS. PRICES EACH.

CLOCKS SECURELY PACKED SO AS TO INSURE SAFE DELIVERY.

THE "BANK" REGULATOR

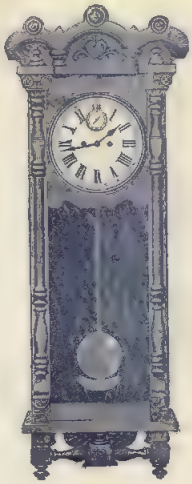
Solid oak. Height, 33½ inches; width, 18½ inches. Dial 12 inches.

No. 5831 Eight-day time, each, $ 9 70
No. 5832 Eight-day strike, cathedral gong, each, 12.70
No. 5833 Eight-day time, calendar, each 10.30
No. 5834 Eight day strike, cathedral gong, calendar 12.30

SATURN

Sound oak antique finish. Height, 34¼ inches; width, 15¼ inches. Dial 12 inches. Fitted with 30-day time movement.

No. 5835 Each $21 35



ELFRIDA

Solid oak or mahogany. Height, 49 inches; width, 19 inches. Dial 10 inches.

No. 5836 Eight-day time .....each, $24 35
No. 5837 Eight-daytime, calendar each, 24.95
No. 5838 Eight-day strike, cathedral gong, each, 26.35
No. 5839 Eight-day strike, cathedral gong, calendar each, 26 95
No. 5840 Thirty-day time.....each, 27.30
No. 5841 Thirty day time, calendar, each, 31 00
No. 5842 Light day weight, time, each 29 20

COLUMBIA

Solid oak or mahogany Height, 48½ inches; width, 14¾ inches. Dial 8 inches.

No. 5843 Eight-day time each, $20 00
No. 5844 Eight-day time, calendar.....each, 20.00
No. 5845 Eight-day strike, cathedral gong.. each, 22.00
No. 5846 Eight-day strike, cathedral gong, calendar each, 22.00
No. 5847 Thirty-day time .....each, 22 95

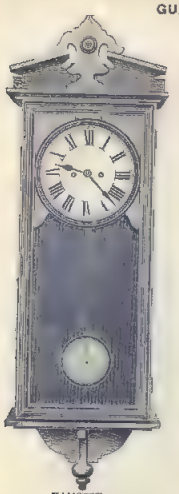
STANTON

Solid oak or mahogany, highly polished. Height, 64 inches; width, 21 inches. Dial 12 inches. Fitted with eight-day weight time, with retaining power movement.

No. 5848 Each.....$64.00

NEW HAVEN CLOCK CO'S FINE REGULATORS

GUARANTEED ACCURATE TIMEKEEPERS. PRICES EACH.



VAMOOSE.

Solid Oak or Mahogany, height 45 inches, width 15¼ inches, dial 10 inches.

No. 5710	Eight-day time each	$15.50
No. 5890	Eight day time, Calendar "	14.10
No. 5891	Eight-day strike, Cathedral gong "	1.55
No. 5893	Eight-day strike, Cathedral gong, Calendar "	18.10
No. 5898	Thirty-day time "	18.40

AUSTRIAN

(Showing 30 day Calendar Fitting)

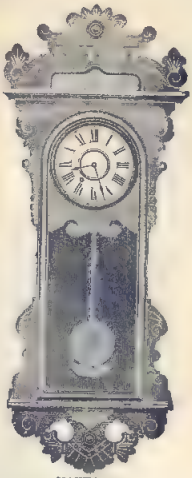
Solid Oak or Mahogany, height 48½ inches, width 18 inches, dial 10 inches.

No. 5804	Eight-day time each	$23.75
No. 5805	Eight-day time, Calendar "	25.25
No. 5806	Eight-day strike, Cathedral gong "	25.35
No. 5807	Eight-day strike, Cathedral gong, Calendar "	25.95
No. 5808	Thirty-day time "	26.30
No. 5809	Thirty-day time, Calendar "	30.00
No. 5810	Eight-day Weight Time "	28.20

TROJAN.

Solid Oak or Mahogany, height 44 inches, width 13½ inches, dial 8 inches.

No. 5811	Eight-day time each	$17.35
No. 5813	Eight-day time, Calendar "	17.95
No. 5814	Eight-day strike, Cathedral Gong "	19.55
No. 5815	Eight-day strike, Cathedral Gong, Calendar "	19.05
No. 5816	Thirty day time "	20.10



MAYWOOD

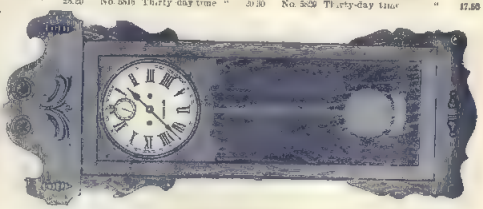
Solid Oak or Mahogany, height 43¼ inches, width 17 inches, dial 8 inches.

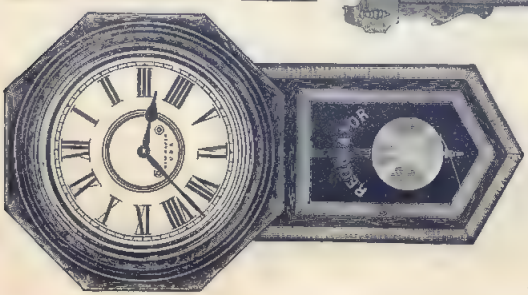
No. 5816	Eight-day time .. each	$14.95
No. 5817	Eight-day time, Calendar "	15.15
No. 5818	Eight-day strike, Cathedral gong "	16.65
No. 5819	Eight day strike, Cathedral gong Calendar "	17.15
No. 5820	Thirty-day time "	17.50

RUTLAND.

Solid Oak or Mahogany, height 48 inches, width 19½ inches, dial 10 inches.

No. 5821	Eight-day time each	$19.95
No. 5822	Eight-day time, Calendar "	19.95
No. 5823	Eight-day Strike, Cathedral Gong "	21.5
No. 5824	Eight-day Strike, Cathedral Gong, Calendar "	7.35
No. 5825	Thirty-day time "	22.30
No. 5826	Thirty-day time Calendar "	24.00





HARVARD

Solid Oak or Walnut, height 32¼ inches, width 17¼ inches, dial 12 inches

No. 5827	Eight-day time. . . . each	$13.60
No. 5828	Eight-day strike, Cathedral Gong "	15.60
No. 5829	Eight-day time, Calendar "	14.50
No. 5830	Eight-day strike, Cathedral Gong, Calendar "	16.50

ADDRESS ALL COMMUNICATIONS TO THE COMPANY TELEPHONE, 7400 COLUMBUS

New York Taxicab Co.

622 WEST 57TH STREET

NEW YORK May 14th 1910.

Timken Roller Bearing Co.
Canton,
Ohio.

Gentlemen:-

We operate over 500 imported Taxicabs in New York City and vicinity.

Due to the hard service they have to give, we had to equip all our Chassis with Timken Roller Bearings, in both front and rear wheels.

Our experience with and use of Timken Bearings has been most satisfactory, and has permitted us to eliminate the serious troubles we had before.

Yours truly,
NEW YORK TAXICAB COMPANY.

Chief Engineer.

Oak Mantel Clocks

Victor Assortment Mantel Clocks.

Per case.

Fancy Oak Frames. Height, 22¾ inches. 6-inch Dial. Eight Day, Half Hour Strike..... $18.00

Packed six in a case. Three with Strike and three with Strike and Alarm. Assorted patterns. Cases not to be broken

Office and Mill Clocks

Each

Eight-Day Oak Wall Clock. Height, 27 inches. 12-inch Face. Eight Day. Time only . . . $5 50
" " " " " " 27 " 12- " " " " Time and Calendar . 5 75
Star Pointer Oak Wall Clock. Height, 32½ inches. 12-inch Face. Eight Day. Time only . 6 00
" " " " " 32½ " 12 " " " " Time and Calendar. 6 50

Packed Each in a Case

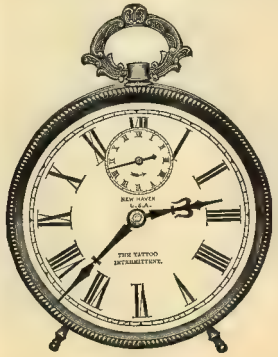
Nickel Plated Alarm Clocks

America.

Alternating Alarm.

		Each.
America Alarm.	With Shut-off. 6 inches high. Runs 36 Hours.....	$1 25
Alternating Alarm.	" " " 7 " " 4½-inch Dial. Runs 36 Hours	2.00

The Alternating Alarm rings and stops alternately for 15 minutes at intervals of 20 seconds



		Each
Tattoo Alarm.	With Shut-off. 7 inches high. 4-inch Dial. 4-inch Bronze Gong on back.....	$2.00

The Tattoo Alarm rings intermittently for 15 minutes, with 40 seconds intervening at intervals Alarm may be shut off by switch.

Each in a Box

OVAL BASE HORIZONTAL JACK

Horizontal Jacks of 30 tons and over are made with this style base. Rams are supplied with either large head or with loose cap, as here shown, as preferred. When claws are used the large head is necessary. Jacks of this style are provided with removable wrought iron claws, when ordered. In this case, a support and guide for the lower end of the claw is cast on the cistern.

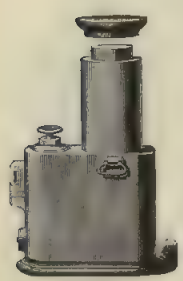


FIG. 5457

Tons	Run Out	Height, Inches	Size of Oval Base	Weight	Price	Price with Claw
30	12	22	12⅛x 9	254	$200	$240
30	18	28	12⅛x 9	285	235	285
40	12	22	13⅜x10	320	240	290
40	18	28	13⅜x10	355	280	340
50	12	22	14 x12	335	260	320
50	18	28	14 x12	380	310	380
60	9	17	14 x12	320	250	310
60	12	20	14 x12	350	275	340
60	18	26	14 x12	410	350	
80	9	19	16 x13	425	310	
80	12	22	16 x13	450	335	
80	18	28	16 x13	525	385	
100	9	19	17 x14⅛	520	375	
100	12	22	17 x14⅛	570	400	
100	18	28	17 x14⅛	660	475	
125	9	19	18 x16	535	425	
125	12	22	18 x16	585	450	
125	18	28	18 x16	685	525	
150	12	23	20 x18⅛	920	500	
150	18	29	20 x18⅛	1160	575	
200	12	24	20 x18⅛	950	600	
200	18	30	20 x18⅛	1240	700	
250	12	25	20 x20	1400	725	
250	18	31	20 x20	1650	850	

Claws for these sizes made to order

OUTSIDE PUMP JACK

Price same as horizontal

FIG. 5458.

DOUBLE PUMP JACK

30 tons and over

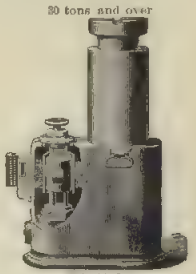


FIG. 5459

The Double Pump Jack is especially adapted for large jacks, as the ram can be run out rapidly by using both pumps together until the strain is taken up; then the small pump only is used, giving the full power of the jack.

Prices on application.

JOYCE-CRIDLAND HYDRAULIC JACKS

Single

FIG. 5460.

OUTSIDE PUMP TYPE

The valve mechanism and working parts of these jacks operate similarly to those of the inside pump type, but the pump is aside of the cylinder instead of in the end of the ram. The filling liquid is retained in the reservoir which surrounds the lower end of the cylinder. The screen which filters the filling liquid is placed on the reservoir end of pipe which conducts the liquid into the pump.

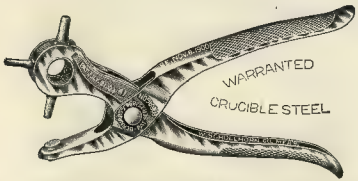
The heavier models, as shown at the right, are equipped with double pumps, which, when both are used, enable these jacks to be operated at twice the speed of a single pump.

Double

FIG. 5461.

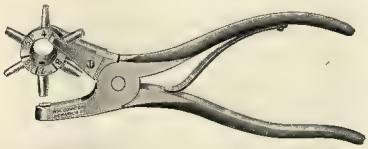
SINGLE PUMP TYPE					DOUBLE PUMP TYPE					
Capacity, Tons	Rise, Inches	Height when down, Inches	Weight, Pounds	Price, Single Pump	Capacity, Tons	Rise, Inches	Height when down, Inches	Weight, Pounds	Price, Single Pump	Price, Double Pump	Ore and Lift Extra
4	6	11	65	$45 00	30	6	13¾	184	$102 00	$132 00	..
4	12	17	78	52 00	30	9	16¾	204	114 00	144 00	$22 00
4	18	22⅜	90	59 00	30	12	20¼	241	126 00	156 00	26 00
4	24	28⅜	105	65 00	30	18	26¾	259	152 00	182 00	32 00
7	6	11	74	47 00	30	24	31¾	304	178 00	208 00	....
7	9	14¼	81	51 00	40	6	14⅛	200	117.00	147 00	..
7	12	17¼	82	54 00	40	9	17⅛	222	132 00	162 00	26 00
7	18	23¼	102	61 00	40	12	20⅛	244	147 00	177 00	26 00
7	24	29¼	116	68 00	40	18	26⅛	288	178 00	208 00	32 00
10	6	11	75	51.00	40	24	32⅛	332	208.00	238 00	.
10	9	15⅛	86	56.00	60	9	18⅝	268	161 00	191 00	26 00
10	12	18⅜	95	61.00	60	12	20¼	313	175 00	205 00	32 00
10	18	24⅜	113	69 00	60	18	26¾	353	200 00	230.00	54.00
10	24	30⅜	131	78 00	80	9	18½	357	193 00	223.00	.
15	6	11½	94	61.00	80	12	21	394	208 00	238 00	....
15	9	15⅝	106	69 00	80	18	27½	469	236 00	266.00	...
15	12	18⅝	120	76 00	100	9	19¼	450	212 00	242 00	..
15	18	24½	142	90 00	100	12	22¼	495	236 00	276 00	35 00
15	24	30⅝	166	104 00	100	18	29¼	596	272 00	312 00	.....
20	6	12⅛	97	77 00	150	9	20	500	341 00	380 00	.
20	9	15⅝	118	87.00	150	12	23	550	370.00	410 00	. ..
20	12	18⅝	133	94 00	150	18	30⅝	750	422 00	462 00	....
20	18	24⅝	165	112 00	200	12	29	750	450.00	490 00	.....
20	24	30⅝	188	130.00	..	....	....	.....	....	.... ..	....

REVOLVING SPRING BELT PUNCHES



No. **284** 8 inch, "Paragon," Full Nickel Plated, 4 Best Quality Steel Screw Tubes, No. 1, 3, 5, 7, Per dozen $14.50

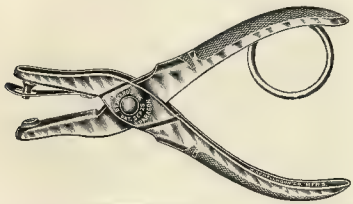
Half dozen in a Box.



No. **225** Full Polished, 6 Steel Drive Tubes, No. 2, 4, 6, 7, 8, 10 ---------- Per dozen $17.00

Half dozen in a Box.

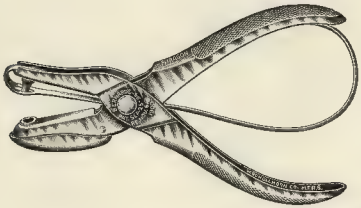
TICKET PUNCHES



No. **250** 5 inch, "Paragon," Full Nickel Plated, with 6 Assorted Designs ---------- Per dozen $4.00

Half dozen in a Box.

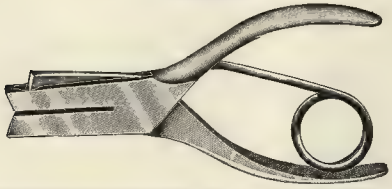
TICKET PUNCHES



The Reservoir, which opens and shuts with a spring, retains the clippings, not allowing them to scatter over the floor.

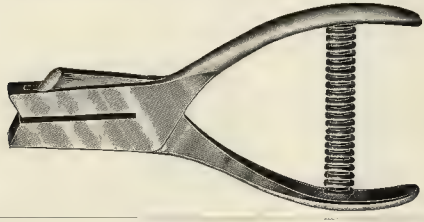
No. **260** 5 inch "Paragon," Full Nickel Plated, with 6 Assorted Designs ..... Per dozen $4.50

Half dozen in a Box.



No. **100** Good Quality, Full Nickel Plated, Assorted Designs ..... Per dozen $6.00

Half dozen in a Box.



No. **200** Heavy, Full Nickel Plated, Assorted Designs ..... Per dozen $8.00

Half dozen in a Box.

PENNSYLVANIA

4 AND 6 CYLINDER CARS

are unsurpassed in quality but are sold at a lower price than other cars of similar class

Pennsylvania motor cars are built in their entirety in our own shop, where the equipment and facilities for producing cars of the highest class are unexcelled. The materials used are the very best obtainable, the workmanship is the most skilled, and every step of construction undergoes the most critical inspection. The resultant product is a car that in design, construction, finish and equipment is as distinctive as it is unrivaled. Characterized by extreme smoothness, silence and flexibility, it has all the speed and power that any reasonable man wants and will afford the utmost satisfaction in every essential feature to the most discriminating and critical motorist.

Type "B-50," $3500
4 Cylinder, 7 Passenger

Type "D-25," $2000
Type "C-50," $3000
Type "F-6," $4500
Type "H-6," $4700

Send for our catalog containing the Pennsylvania story.

There is some territory open to live agents who want to handle a car of exceptional merit.

Pennsylvania Auto Motor Co., Bryn Mawr, Pa.

"PITTSBURGH" HARD-WOOD GAGE BOARDS AND NAME PLATES

IN CHERRY, OAK, OR BLACK WALNUT, ELEGANTLY FINISHED.

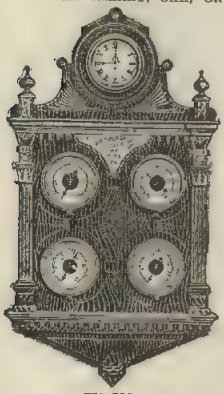


FIG. 783.

PRICES OF GAGE BOARDS.

				Oliver Leaf	Eastlake or Square
To hold two	6	inch Dial Instruments..		$8 00	
" three	6	" "	"	13.00	
" four	6	" "	"	16.00	22.00
" five	6	" "	"	20.00	30.00
" seven	6	" "	"		40.00
" two	6½	" "	"	13.00	
" three	6½	" "	"	15.00	
" four	6¾	" "	"	20.00	27.00
" five	6¾	" "	"	25.00	35.00
" seven	6¾	" "	"		45.00
" two	8⅛	" "	"	15.00	
" three	8⅛	" "	"	20.00	
" four	8⅛	" "	"	25.00	33.00
" five	8⅛	" "	"	30.00	42.00
" seven	8⅛	" "	"		55.00
" two	10	" "	"	18.00	
" three	10	" "	"	22.00	
" four	10	" "	"	30.00	40.00
" five	10	" "	"	35.00	52.00
" seven	10	" "	"		70.00
" two	12	" "	"	20 00	
" three	12	" "	"	25.00	
" four	12	" "	"	32.00	48.00
" five	12	" "	"	38.00	60.00
" seven	12	" "	"		80.00

Gage frames or boards for different sized Gages from those on the above list shall be charged at the price of the next size larger. Special prices on stone, slate or marble Gage tablets.

NAME PLATES, STAMPED OR ENGRAVED

For Gage boards shall be charged extra, at 12½ cents per letter; this price includes the metal of which the plate is made.

Note. For prices of instruments see respective lists.

MARBLE AND MARBLEIZED GAGE BOARDS.

FIG 784.

Very attractive in design and of handsome appearance. Suitable for any number and size of instruments.

PRICES UPON APPLICATION

INSPECTORS' TESTING AND PROVING OUTFIT

The outfit consists of the following nickel plated instruments: Three-inch Standard Test Gage, Screw Test Pump, Gage Hand Puller, Hand Set, Lever Handle Union Gage Cock and Screw Driver, all neatly and compactly contained in velvet-lined leather case, fitted with lock and handle. The approximate weight of this outfit is eight pounds.

Price, each $45.00

FIG. 785.

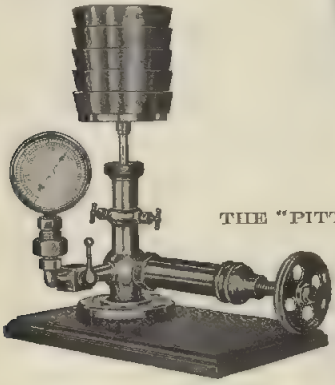


FIG 786.

THE "PITTSBURGH" IMPROVED PRESSURE GAGE TESTER

WITH DOUBLE AREA PISTON FOR WIDE RANGE OF PRESSURE

This is an instrument for accurately testing and correcting pressure gages by means of weights. As a standard for measuring pressures it is equal in accuracy to a mercury column, yet much more convenient and less expensive.

PRICE, EACH, $100.00

which includes Tester complete with weights for testing to one thousand pounds, and furnished with Screw Driver, Hand Puller, Hand Set, Oil Can, and six Nipples for attaching gages, all packed in two separate cases provided with substantial handles, so as to be easily carried.

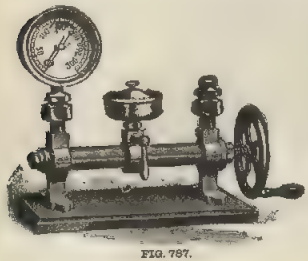


FIG. 787.

THE "PITTSBURGH" HYDRAULIC PUMP FOR TESTING GAGES

This pump is made entirely of brass, highly polished, or nickel plated.

It is provided with a double cylinder, one inserted into the other. The piston working in the inner cylinder forces the water into the space between this and the outer cylinder, to which the test gage and gages to be tested are connected.

Price, exclusive of Test Gage, Brass Finish. $35.00

Price, exclusive of Test Gage, Nickel Plated. 38.00

FIG. 780.

"PITTSBURGH" AMMONIA GAGES

Our Ammonia Gages are made with all the interior parts of iron, excepting the spring, which is of steel, to withstand ammonia, or any other gas or acid which attacks the ordinary Bourdon spring.

When desired these Gages are made to indicate both pressure and vacuum on the same dial, but ordinarily only show pressure.

Size	Iron Case and Ring	Iron Case, N. P. Ring
6 inch Dial.....each	$35.00	$35 50
6¾ " ..... "	40.00	40.60
8 or 8½ " ..... "	45.00	45 75

FIG 781.

"PITTSBURGH" ALTITUDE GAGES

WITH IMPROVED INDEPENDENT MOVEMENT

For indicating the Height of Water Column in feet.

They are provided with a set pointer, and made with either black or silvered dials. Springs of solid drawn or brazed tube.

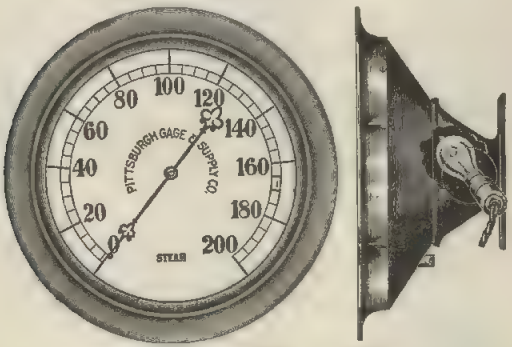
PRICES INCLUDING COCK

Size, Inches	Iron Case, Japanned	Iron Case N. P. or Silver Metal Ring	Brass Case	N. P. or Silver Metal Case	Brass Deep Case, O. G. or Oct. Ring	N. P. or Silver Metal Deep Case	Aluminum Case
4½ or 5	$12.00	$12.20	$14.00	$15.00	$16.00	$17.00	$14.00
5½	11.00	14.25	16.00	17.25	18.50	19.75	16.00
6	16.00	16.50	20.00	21.50	23.00	24.50	20 00
6¾	20.00	20.60	25 00	27 00	28 00	30 00	25 00
8½	30.00	30 75	40 00	42 50	43 50	46.00	40 00
10	40.00	41 00	50 00	53 00	54 00	57 00	50.00
12	60.00	61 50	80 00	84 00	85 00	89 00	80 00

In ordering, state maximum height of water column. No syphon is required with this gage.

"PITTSBURGH" ILLUMINATED DIAL GAGE

SINGLE OR DOUBLE TUBE.



Full View. FIG 788. Side View.

The Illuminated Dial Gage is meeting with general favor with many of the leading engineers, architects and boiler manufacturers; it fills the requirements when gage is placed at an elevation.

A light placed in opening at back of case (generally an incandescent bulb) gives about the same effect as the illuminated tower clock at night.

There is no chance of an error in properly locating the position of indicating pointer at night, or at any time when gages are placed where light is not sufficient to show pointer distinctly on ordinary dial.

SINGLE TUBE—PRICES.

Size.	Iron Case, Brass Ring.	Iron Case, N. P. or Silver, Metal Ring.	Brass Case.	N. P. or Silver, Metal Case.
12 inch dial,	$30 00	$31 50	$39 00	$84 00
10 " "	40 00	41 00	50 00	53 00
8½ " "	30 00	40 75	40 00	42 50

DOUBLE TUBE—PRICES.

Size.	Iron Case, Brass Ring.	Iron Case, N. P. or Silver, Metal Ring.	Brass Case.	N. P. or Silver, Metal Case.
12 inch dial,	$35.00	$36 50	$45 00	$89 00
10 " "	45.00	46.00	55 00	58 00
8½ " "	38 00	38.75	44 00	46 00

A syphon should always be used with this gage.

GAGE REPAIRING

FIG 788

PARTIAL VIEW OF OUR GAGE REPAIR SHOP

Delicacy of construction and adjustment are essential characteristics of an accurate and sensitive gage. Greater or less derangement and deterioration of the delicate mechanism cannot but result from the comparatively rough usage ordinarily accorded these instruments in general service. Furthermore, even under the best conditions, continued endurance of varying pressure, temperatures, etc., necessarily induce slight alterations of adjustment, affecting the accuracy of the index hand.

Every gage, therefore, upon whose correct indications the safety of lives and property depends, should be given occasional overhauling at the hands of competent persons.

We are exceptionally well equipped for this work and our gage hospital offers every facility for thorough and accurate repair, re-adjustment, refinishing and testing of gages of any make, size and style.

Our provisions for this line of work enable us to do it well, quickly and atvery low cost.

COLD CHISELS

HAMMOND
Forged Tool Steel.
Polished Head and Bit. Oil Finish.

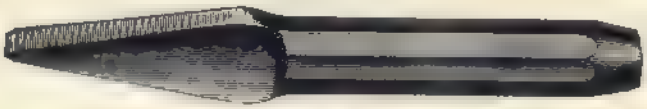
Size, inches	5x⅝	6x⅞	6¼x⅝	8¾x¾	9¼x⅞	10x1
No. **640**						
Per dozen	$1.50	2.25	3.50	5.00	7.00	9.00

Half dozen in a Box.

BREWER BROS.
Made of Best Cast Steel.

Size, inches.	5x⅝	6x⅝	6¼x⅝	7x¾	8x⅞	9x1
No. **322**						
Per dozen	$3.00	4.00	5.60	8.00	11.40	15.60
Doz. in a Box	1	1	⅓	⅓	⅓	¼

CAPE CHISELS



BREWER BROS.
Made of Best Cast Steel.

Octagon Steel, inches	6x⅜	7x⅝	8x¾	8x⅞
Width of Face, inch	5/16 or ¼	5/16 or ⅜	7/16 or ½	½ or 5/8
No. **323** Per dozen	$5.40	7.20	11.00	15.80

Half dozen in a Box.

BLACKSMITHS' CHISELS

COLD, NO 1350 HOT, NO. 1355

Weight, 1 to 3 pounds .. Per pound .50

WROUGHT BLACKSMITHS' TONGS

Size, inches	18	20	22	24	26
Per dozen	$8.75	9.75	11.00	12.50	14.00

BLACKSMITHS' SHOEING PINCERS

P. S. & W. WROUGHT, POLISHED FORGED STEEL JAWS

Size, inches	10	12
P. S. & W. Per dozen	$7.00	7.50

Half dozen in a Box.

DROP FORGED, POLISHED JAWS

TRADE S MARK

Size, inches	10	12
Per dozen	$7.50	8.00

One-third dozen in a Box.

MACHINISTS' HAMMERS

BALL PEIN

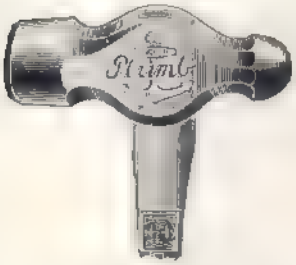


Fig. 8704A

PLAIN EYE RIVETING

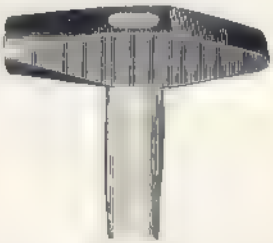


Fig. 8704B

B. S. HAND

Fig. 8704C

MACHINISTS' BALL PEIN

Number		372	373	374	375	376	377	378	379
Size	no.	00	0	1	2	3	4	5	6
Weight		12 oz.	1 lb.	1 lb 4 oz.	1 lb 8 oz.	1 lb. 12 oz.	2 lb.	2 lb. 4 oz.	2 lb 8 oz.
Price	per doz	12 00	12 50	13 50	14 00	15 50	16.50	17.50	18.00

PLAIN EYE RIVETING

Number		251	252	253	254	255
Size	no.	1	2	3	4	5
Weight		7 oz.	9 oz.	12 oz.	15 oz.	1 lb. 2 oz.
Price	per dozen	5.75	6 00	6 25	6 50	7 00

BLACKSMITHS' HAND

Number		281	282	283
Size	no.	1	2	3
Weight		2 lb.	2 lb 10 oz.	3 lb.
Price	per dozen	14 00	15 00	16 00

ADZE EYE BRICK

Fig. 8704D

B. S. ROUNDING

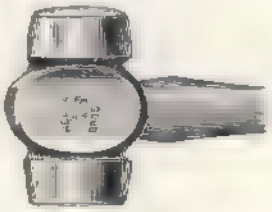


Fig. 8704E

ADZE EYE BRICK

Number		461	462
Size	no.	1	2
Weight		1 lb. 8 oz.	2 lb.
Price	per dozen	14 00	15 00

BLACKSMITHS' ROUNDING

Price Rounding Hammers, 2 to 3 lbs.	per dozen	28 80

FARRIERS' HAMMERS

No. 64

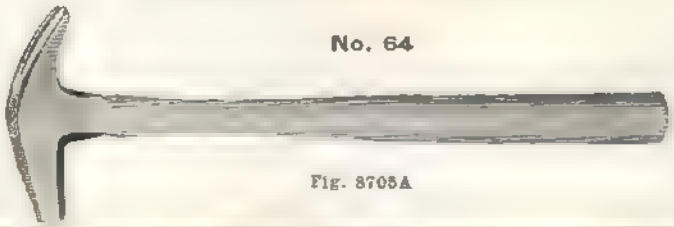


Fig. 8705A

Price, No. 64 Driving Hammers, 11 to 20 ounces . . . . . per dozen 12 00

No. 65

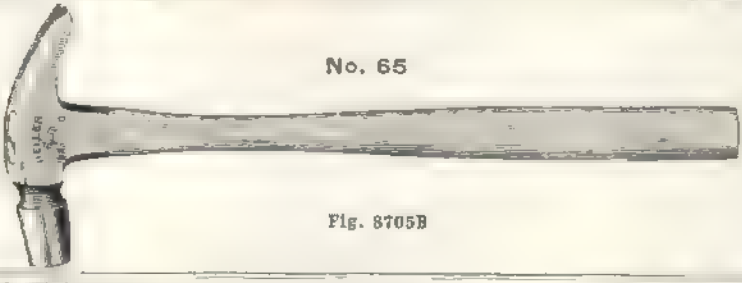


Fig. 8705B

Price, No. 65 Driving Hammers, 11 to 20 ounces . . . . . per dozen 15 00

TACK HAMMERS, CLAWS, ETC.

No. 12

Fig 8705C

Price, No. 12 Tack Hammers . . . . . per dozen 1 20

No. 19

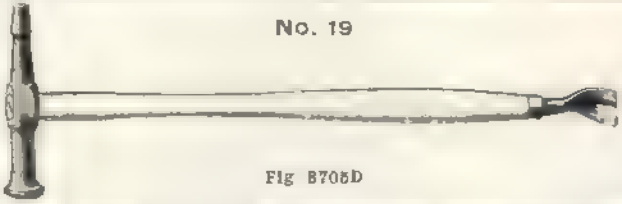


Fig 8705D

Price, No. 19 Magnetic Tack Hammers . . . . . per dozen 1 80
Price, Savage Magnetic Tack Hammers . . . . . per dozen 3 00

No. 46 TACK CLAW

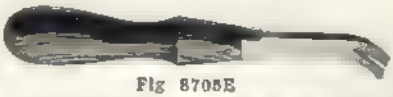


Fig 8705E

Price No. 46 Tack Claws per dozen, 2 50

BIG 4 TACK PULLER

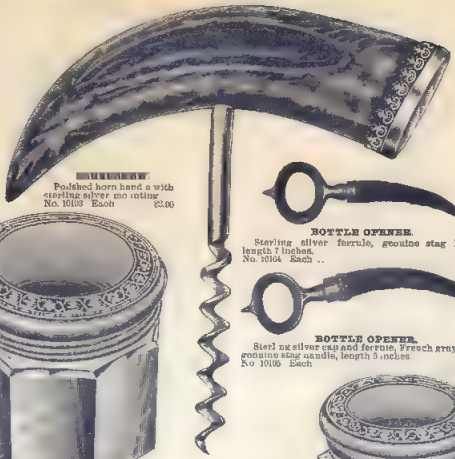
Fig 8705F

Price Big 4 Tack Pullers per dozen, 1 50

Fine Sterling and German Silver Novelties

Cuts are exact size, except Nos. 10104, 10105 and 10108. PRICES EACH.

POMADE OR SALVE JAR.
German silver, French gray, heavy embossed cover
No. 10102 Each $1.00



CORKSCREW.
Polished horn handle with sterling silver mounting
No. 10103 Each $3.00

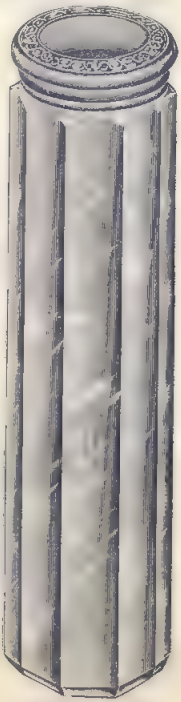
BOTTLE OPENER.
Sterling silver ferrule, genuine stag handle, length 7 inches.
No. 10104 Each .. $2.00

BOTTLE OPENER.
Sterling silver cap and ferrule, French gray finish, genuine stag handle, length 5 inches.
No. 10105 Each $2.50

POMADE OR SALVE JAR.
Sterling silver, heavy cover, gold lined, French gray ornamented border, satin center, glass jar
No. 10101 Each..... $2.00

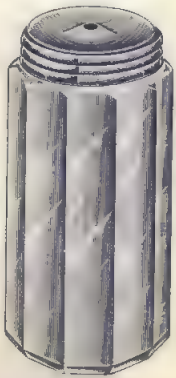
Small Salve Jar to match, height 1⅝ inches.
No. 10107 Each $1.50

PUFF JAR.
German silver, etched cover, cut glass effect jar
No. 10108 Each $1.75



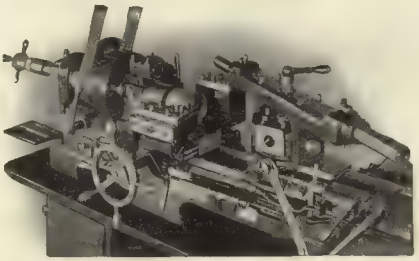
JAR FOR TOOTH BRUSH.
Sterling silver heavy cover, gold lined French gray ornamented border, satin center, glass jar
No. 10111 Each $1.00

PUFF JAR.
Sterling silver, heavy cover, gold lined, ornamented French gray border satin center, rich cut glass jar,
No. 10109 Each. $7.50



TOOTH POWDER JAR.
Sterling silver, heavy cover, gold lined, French gray ornamented border, satin center, glass jar.
No. 10110 Each. $1.00

For Turning and Grooving Pistons for Automobile Engines at One Operation



P. & W. Piston Turning Machine Grooving an Automobile Engine Piston

THE P. & W. STANDARD 2 x 26 in. TURRET LATHE

Fitted with Special Appliances

produces a perfect piston with interior and exterior walls in exact concentricity.

Permits working to the least possible thickness of walls to produce an exceptionally light-weight piston of high efficiency.

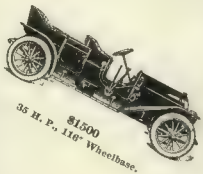
Turns out a *completed* piston, several times faster, with greater accuracy and at a greater saving than any other machine on the market.

Write for "Automobile Manufacturing" Literature

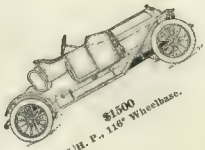
PRATT & WHITNEY CO.
HARTFORD, CONN.

NEW YORK: 111 Broadway
CHICAGO: Commercial National Bank Building
BOSTON: Oliver Building
PITTSBURG: Frick Building
BIRMINGHAM, ALA.: Brown-Mark Building.
LONDON, ENG.: 23 Victoria St., S. W.
HAMILTON: Ohio
PHILADELPHIA: 21st and Callowhill Streets
DETROIT: Majestic Building
CLEVELAND: Rockefeller Building
ST. LOUIS: 516 North Third Street

Marathon



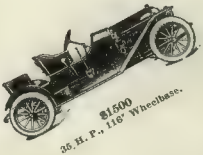
35 H. P., 116" Wheelbase. $1500



35 H. P., 116" Wheelbase. $1500

Marathon

35 H. P., 120" Wheelbase. $1700



35 H. P., 116" Wheelbase. $1500

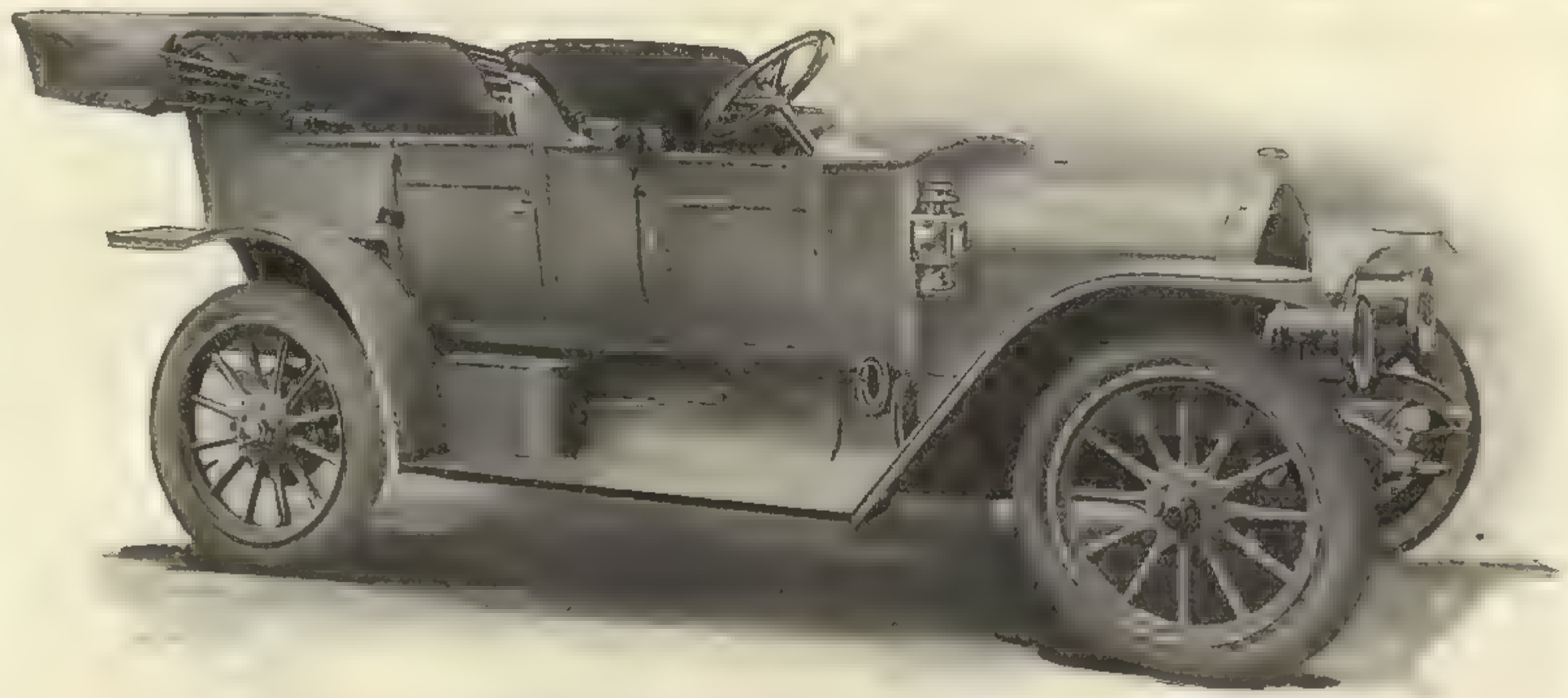
Marathon

Write for Agency Catalogue.

SOUTHERN MOTOR WORKS

MANUFACTURERS

NASHVILLE, - - TENN.



Model K—1911, 35 H. P. Pullman Vestibuled Touring Car, $2100; $2500 fully equipped

Pullman AUTOMOBILES

PULLMAN MOTOR CAR CO.
(Dept. K.) **YORK, PA.**

Licensed Under Selden Patent

THE PULLMAN Automobiles made good from their **first year,** and in presenting their 1911 models the makers offer the automobile buying public the refined product of **seven years' experience** in the construction of motor cars. The PULLMAN is a sturdy, substantially built—an **honestly built Automobile,** constructed around one of the most perfect and most silent-running engines ever put into an automobile.

Troubles with PULLMAN cars are little troubles. PULLMAN cars do not stay in repair shops. They are built for service, not for trouble. Immediate Deliveries of 1911 Models.

1911 MODELS AND PRICES

Model K-11, 35 H. P., Touring Car (Open front body)	$2,000.00
Model K-11, 35 H. P., Vestibuled Touring Car	2,100.00
Model K-11, 35 H. P., Toy Tonneau	2,000.00
Model K-11, 35 H. P., Roadster	2,000.00
Model O-11, 30 H. P., Toy Tonneau	1,650.00
Model O-11, 30 H. P., Roadster (3-Passenger)	1,650.00
Model O-11, 30 H. P., Roadster (2-Passenger)	1,600.00
Model M-11, 50 H. P., 5 or 7-Passenger Touring Car (Open Front)	3,500.00
Model M-11, 50 H. P., 5 or 7 Passenger Vestibuled Touring Car (with full equipment)	4,000.00

We have a very attractive 1911 proposition to Agents who wish to represent an unexcelled line of Motor Cars at their prices and who give business-like representation in turn. Write for 1911 Advance Catalog

SAND DRYING STOVE

FIG. 4807.

Total height, 59½ inches.

Greatest width of skirt, 55 inches.

Weight, 1425 pounds.

Capacity, 1600 to 1800 pounds of damp sand to the charge.

This Sand Dryer consists of a very heavy cast-iron stove made in sections, so that the parts are easily renewed. The stove is enclosed by a heavy sheet iron skirt, resting on a perforated ring. Damp sand is shoveled into the skirt, and as it dries it falls through the holes in the perforated ring, so that the action of the Dryer is continuous.

The Dryer will furnish four to five tons of dry sand per day.

List price..... $50.00

COAL MINERS' PICKS

Soft Steel Body; with extra full weight highest grade crucible forged steel points, oil tempered, Japan finish; are guaranteed to be the very highest grade that can be produced.

"BESTOVALL" BRAND

Cut Shows Long Ear

FIG. 4608

UNDERMINING, SHORT EAR

Weight each ..... lbs.	1½	1¾	2	2¼	2½	
Length over all ..... in.	15	15⅜	16	17	17⅛	
List ..... per doz.	$10 50	10.50	10.50	10.50	10.50	

UNDERMINING, LONG EAR

Weight each ..... lbs	1½	1¾	2	2¼	2½	2¾
Length over all .. .... m	15⅛	16	16⅜	17	17⅜	17¾
List ..... per doz.	$10 50	10.50	10.50	10.50	10.50	10.50

Short Ear

FIG 4609

CUTTING, LONG EAR

Weight each lbs.	2¼	2¾	3	3¼
Length over all, in.	14½	15	15¼	16¼
List ..... per doz.	$11 .00	11.00	11.00	11.00

CUTTING, SHORT EAR

Weight each .... lbs.	2	2¼	2½	2¾	3	3¼	3½
Length over all ... . in.	14	15	15	15½	15⅝	16	16½
List ... ... per doz	$10 50	10.50	10 50	10.50	10.50	10.50	10.50

"FULTON" BRAND

Long Ear

FIG. 4610

UNDERMINING, SHORT EAR.

Weight each ..... lbs.	1½	1¾	2	2¼	2½
Length over all ..... m.	15⅛	1 15/16	16¾	17	17⅜
List ..... per doz.	$9.50	9 50	9 50	9 50	9 50

UNDERMINING, LONG EAR

Weight each ..... lbs.	1½	1¾	2	2¼	2½	2¾
Length over all ..... m.	15½	15¾	17	17	18	18
List ..... per doz.	$9.50	9 50	9 50	9.50	9.50	9.50

Short Ear

FIG 4611.

CUTTING, LONG EAR

Wgt. each .....lbs.	2¾	2¾	3	3¼
Length over all, in.	15	15	15¾	16
List .....per doz.	$10.00	10.00	10.00	10.00

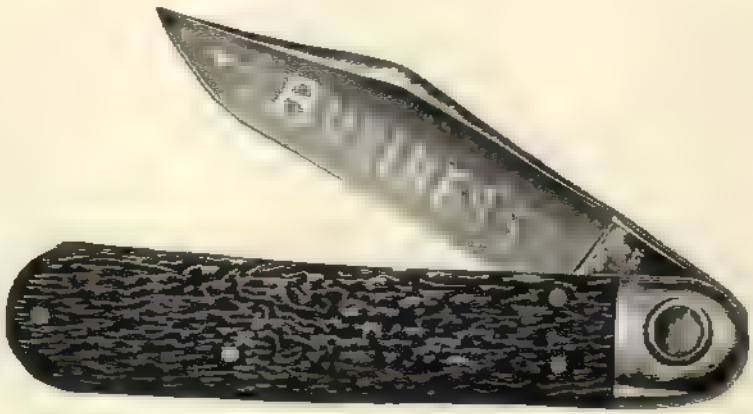
CUTTING, SHORT EAR

Weight each .. . . lbs.	2	2¼	2½	2¾	3	3¼	3½
Length over all ..... in.	13½	14¾	15	15½	15¾	16	16
List ..... per doz.	$9.50	9.50	9 50	9 50	9.50	9 50	9.50

PUSH BUTTON POCKET KNIVES

NO. 100 STAG, NO. 105 PEARL

No. **100** 2 Blades, Stag Handles, Push Button, Polished Blades ..... Per dozen $12.00
" **105** 2 " Pearl " " " " " " ..... " " 32.00



NO. 510 STAG

No. **510** 1 Blade, Stag Handles, Push Button, Polished Blade..... Per dozen $12.00

NO. 1000 STAG

No. **1000** 1 Blade, Stag Handles, Push Button, Polished Blade ..... Per dozen $15.00

Half dozen in a Box.

QUEEN ARCHITECTS' OR DUMPY LEVEL

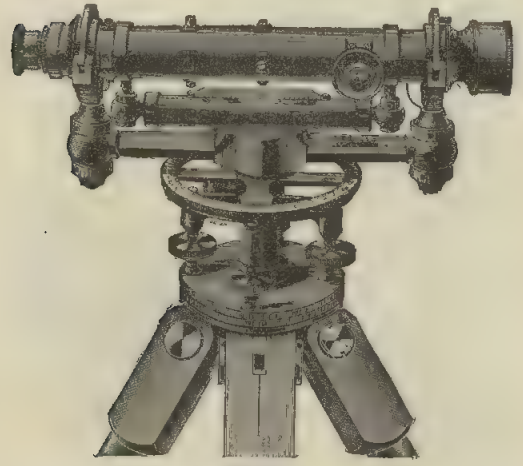


FIG 2888.

A 1532, Architects' or Dumpy Level, as illustrated, is an admirable instrument, and can be highly recommended, as it has met with a very large sale among Engineers requiring a Dumpy Level; also among Architects, Builders and others engaged in construction work, and among Engineers and Surveyors, by whom it is used in city work. The telescope is 12 inches long, of the finest optical qualities and has magnifying power of about 25 diameters. It has truly ground level of medium sensitiveness, which is graduated and securely mounted under the telescope. The telescope has red metal collars, which rest in the V's and are held in position by clips which are hinged and locked the same as in the Engineers' level. The instrument turns upon a horizontal circle 3 inches in diameter, graduated from 0° to 90° each way, and is read to 5 minutes by a vernier which is fixed to the spindle. The instrument is furnished in hardwood box, fitted with sunshade, plumb bob, reading glass, rubber cover, screw driver, adjusting pins and metal trivet.

Price, including tripod.....each, $45.00

A 1532¾, Architects' Level, as above, with tangent screw.
List price.....each, 50.00

We also make this level with a tilting attachment, enabling sights of 15° above or below the horizontal to be taken. The attachment consists of a small set of standards screwed to the center of the level bar, provided with U shaped grooves at the top to receive the telescope axle; the instrument being convertible, can be used either with or without the attachment.

A 1532¾, Architects' Tilting Level, complete.
List price.....each, $60.00

A 1532¾, Architects' Tilting Level, with tangent screw complete.
List price.....each, 65.00

FIG 2889

PLANES

BAILEY ADJUSTABLE IRON PLANE

With smooth or corrugated bottom. In ordering specify whether smooth or corrugated bottoms are wanted.

4	Smooth,	9	inches in length,	2	inch cutter	. . .	each,	$2 20
4½	"	10	" " "	2⅜	"		"	2 50
5	Jack,	14	" " "	2	"		"	2 50
5½	"	15	" " "	2⅛	"		"	2 85
6	Fore,	18	" " "	2⅛	"		"	3 20
7	Jointer,	22	" " "	2⅜	"		"	3 65
8	"	24	" " "	2⅜	"	. . . . .	"	4 35

WOOD BOTTOM JACK PLANE

BOTTOMS ARE OF SELECTED BEECH

FIG 2890.

No. 23	Smooth,	9	inches in length,	1¾	inch cutter	. . . . .	each,	$1 35
No. 27	Jack,	15	" " "	2⅛	"	. . . . .	"	1 70
No. 29	Fore,	20	" " "	2⅜	"	. . . . .	"	1 85
No. 31	Jointer,	24	" " "	2⅜	"	. . . . .	"	2 00
No. 33	"	30	" " "	2⅜	"	. . . . .	"	2 20

Top castings for Planes, 20c each.

FIG. 2891.

STANLEY IRON BLOCK PLANES

No. 220 Adjustable, 7½ inches in length, 1⅝ inch cutter . . . . . each, $0 60

LOW ANGLE BLOCK PLANES

No. 60 Nickel trimmings, 6 in. in length, 1½ inch cutter . . . . . each, $1 15

No. 65 Nickel trimmings, 7 in. in length, 1⅝ inch cutter . . . . . each, 1 25

STANLEY ADJUSTABLE BEADING, RABBET AND MATCHING PLANE

This Plane embraces (1) Beading and Center Beading Plane; (2) Rabbet and Filletster; (3) Dado; (4) Plow; (5) Matching Plane; (6) Sash Plane; and (7) a superior Slitting Plane.

Each Plane has seven Beading Tools (⅛, 3/16, ¼, 5/16, ⅜, 7/16, and ½ inch), ten Plow and Dado Bits (⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, ⅝, ¾ and ⅞ inch), a Slitting Blade, a Tonguing Tool and a Sash Tool.

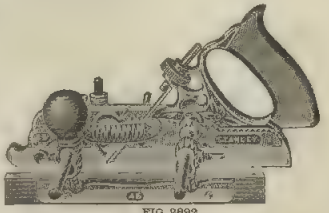


FIG. 2892

No. 45 Nickel-plated, with Twenty Tools Bits, Etc. . . . . each, $ 8 00

No. 55 Universal Plane, with 52 Tools, Bits, Etc . . . . . " 16 00

WELLS LIGHTS.

FIG. 4083.

Invaluable for Foundries, Boiler Works, Railroad and Contractors' Uses.

No. 1. 800 candle power. Has flame 15 inches long; oil used, one-half gallon per hour. Size of tank, 10¾x16 in. Weight, when full, 75 lbs.; when empty, 45 lbs.

It holds sufficient oil to burn for about five hours, but can be refilled while burning, without danger or putting out the light.

Price, complete.....$75 00

No. 3. 2,000 candle power. Has flame 30 inches long; oil used, one gallon per hour; size of tank, 18x24 inches; weight when full, 245 lbs.; when empty, 110 lbs. The tank is of steel boiler plate with handles on each side. It can be carried by two men, or, by using the carriage illustrated on next page, may be moved about by one person. In actual tests this size light has been found of greater illuminating power than two are lights rated at 1,200 C. P. each. It holds sufficient oil to burn 14 hours, but may be refilled while burning.

ABSOLUTELY FREE FROM DANGER, giving a clear white light, without smoke or spray; is not dazzling and does not throw intense shadows like the electric light.

Price, complete.....$100 00

No. 5. 4,000 candle power. Has flame 36 inches long; oil used, 1½ gallons per hour. Tank same as No. 3. Either burner used on same tank.

Price, complete.....$110 00

EXTRA BURNERS.

For No. 1 light, $10 00. For No. 3 light, $12 00. For No. 5 light, $20 00.

An extra burner is of value where lights are in constant use in tunnels, mines, etc. A spare burner being kept always clean, ready for immediate use, is always an advantage.

No. 1 Burners to work with No. 3 Lights are very useful, as a light of 800 C. P. is often sufficient in clearing up foundries, and in machine shops, and enables users to have either 800 or 2,000 C. P. light as desired with a No. 3 light.

ALL LAMPS SENT COMPLETE with Chimney, Wind Guard, Spanners, Cleaners and Book of Instructions.

WELLS LIGHTS—CONTINUED.

FIG 4084.

CARRIAGE.

For Nos. 3 and 5 Wells Lights.

This handy carriage is made to pick up any No. 3 lamp.

By its use, lamps when full of oil can be easily wheeled about by one person.

Price, carriage only, to fit any No. 3 lamp.....$18 00

EXTRAS AND SEPARATE PARTS.

Full details of these are given in Book of Instructions, and are kept in stock.

VAPOR AND OIL FOUNDRY TORCHES.

These torches produce an intense white light, far superior to any other in brilliancy. They are indispensable for lighting factories, foundries, machine shops, etc.

	List Per Dozen.
No. 10, Single Burner Vapor or Gasoline Torches	$25 00
No. 11, Single Burner Coal Oil Torches	31 00
No. 14, Single Burner "Giant" Vapor or Gasoline Torches	54 00
No. 12, Double Burner Vapor or Gasoline Torches	54 00
No 13, Double Burner Coal Oil Torches	64 00

FIG 4085.

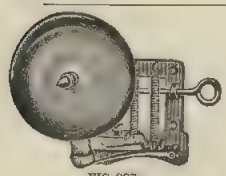


FIG 887.

GONG BELLS

HIGGINS' PATTERN—SINGLE TRIP

Size of Bowl.....inches	5	6	8	10
Wgt. per doz., about lbs.	30	36	66	108
Per dozen.....	$25.00	$34.00	$60 00	$90.00

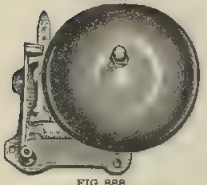


FIG. 888

NO. 1—SINGLE TRIP

Size of Bowl...in.	5	6	8	10	12
Weight per doz., about lbs.....	24	26	60	120	196
Per doz.....	$25 00	$34.00	$60 00	$90 00	160.00

SCHOOL AND CHURCH BELLS

With Clapper

FIG 889

FIG 890.

BELLS ARE NUMBERED BY THE DIAMETER IN INCHES

List Number and Diameter in Inches	Weight of Bell only	Weight of Bell and Mountings	List Price	List Number and Diameter in Inches	Weight of Bell only	Weight of Bell and Mountings	List Price
School Bells, 20	110	165	$16.00	Church Bells, 34	487	765	$90.00
" " 22	122	205	20.00	" " 36	605	950	110.00
" " 24	153	250	25.00	" " 38	660	1010	125.00
" " 26	220	350	40.00	" " 40	800	1300	150.00
" " 28	294	450	50.00	" " 42	915	1480	165.00
				" " 44	1062	1790	200.00
Church Bells, 30	336	570	65.00	" " 48	1430	2280	280.00
" " 32	388	640	75.00	" " 54	2060	3150	375.00

The weight and prices above named are for complete bells, and include wood studs, wheel for rope, and for Nos. 30 32, 34, 36, 38, 40, 42 44 48 and 54, tolling-hammer without extra charge. Tolling-hammers, for Nos. 24, 26 and 28, when so ordered, 5.00 each extra. All sizes, except Nos. 20 and 22, have springs.

CRYSTAL METAL FARM BELLS

FIG. 891

List Number	Diameter	Weight, Complete	Price, Bronzed
1	15 inches	40 lbs	$4 00
1	17 "	50 "	5 .0
2	19 "	75 "	7 50
4	21 "	100 "	10.00

Nos. 1, 2 and 3 are mounted as shown in cut No. 4 bell is furnished with two uprights for platform or belfry.

STEEL ALLOY ALARM BELLS
FOR TOWNS AND VILLAGES

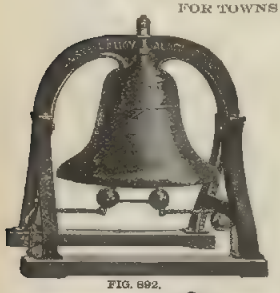


FIG. 892.

List Number	Diameter of Bell, Inches	Weight of Bell, Lbs.	Weight Bell and Mount'g Lbs.	List Price
530	30	341	695	$70.00
532	32	386	695	80.00
534	34	470	780	95.00
536	36	575	855	115 00
538	38	660	955	13 .00
540	40	780	1,190	1 0 00
542	42	915	1 .25	17 .00
544	44	1,140	1,595	2 5.00
546	48	1,440	2 060	260 00
554	54	2,125	2,980	380 00

FIG 893.

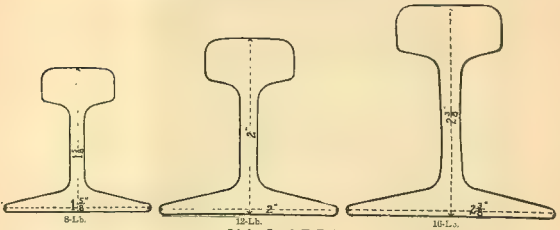
STEEL ALLOY FIRE ALARM BELLS

List Number	Diameter of Bell, Inches	Weight of Bell only, Lbs.	Weight Complete Outfit, Lbs.	List Price
130	30	350	400	$50 00
132	32	400	450	60.00
134	34	500	550	70 00
136	36	590	645	80.00
138	38	660	715	100.00
140	40	800	886	120.00
142	42	915	1,000	140 00
144	44	1,190	1,290	150.00
148	48	1,440	1,500	200 00
154	54	2,100	2,200	275.00

These Alarm Bells are furnished as represented by cut, except rope; has bolt with two washers to secure it to timber, clapper and two sheaves of rope wheels. No springs used in Alarm Bells.

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Rail and Splice Bars



Light Steel T Rail.

		Per lb.
Eight pounds to the yard. Approximate Measurement, 1⅛ inches high, 1⅝-inch Base		
Twelve " " " " " " 2 " " 2 "		
Sixteen " " " " " " 2⅜ " " 2⅜ "		
Twenty " " " " " " 2⅝ " " 2⅝ "		

Heavier Rails of any standard sections furnished on special order.

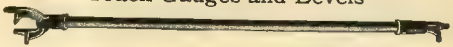
Splice Bars.

	Per joint.
For Eight-pound Rail. Two Plates and Four Bolts to the Joint.	
" Twelve " " " " " " " " " "	
" Sixteen " " " " " " " " " "	
" Twenty " " " " " " " " " "	

Saw Mill Track.

	Per lb.
2 inches Wide. 1 inch High. About 4 pounds to the foot	

Track Gauges and Levels

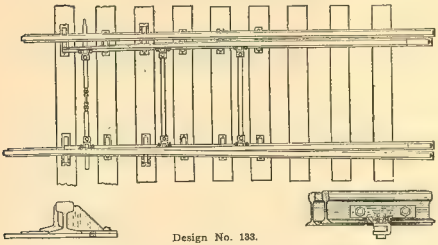


	Each.
Huntington Standard Track Gauge. Without Insulation. Riveted Malleable Heads	$3 00
" " " " " With " " " "	3 50

	Each
Wood Bar Track Level. Iron Bound. Protected Lever. Without Insulation	$3 00
" " " " " " " " With "	3 50

	Each
McManus Track Gauge and Level. Ash and Malleable Iron Gauge with Rubber Packing	$5 00

Split Switches



Design No. 133.

Standard Split Switches With Adjustable Head Rod.

With 5-ft points fixtures are furnished as shown in cuts; with 12-ft. points two bridle bars four rail braces riveted to slide plates, and six additional slide plates; with 10 ft points two bridle bars, four rail braces riveted to slide plates, and four additional slide plates

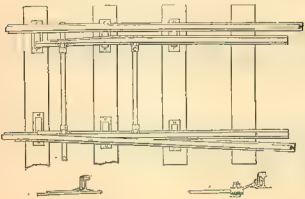
Length, feet	7½	10	12	15
45 lb Rail, each	$16 30	17.15	18.90	24 95
50 " " "	16.90	20.05	21.90	26 45
56 "	17 55	20 90	22 90	27.90
60 " " "	18 30	21.65	23 75	28 60

Switches consist of the following:

Length, feet	7½	10	12	15
Adj Bridle Bars	1	1	1	1
Points	2	2	2	2
Plain Bridle Bars	1	1	2	56 "
Rail Braces	4	4	4	60 "
Slide Plates	6	8	10	12

Approximate Weights.

Length, feet	7½	10	12	15
45-lb. Rail	230	350	450	550
50-" "	257	400	501	615
56 " "	300	425	570	701
60 "	328	455	575	770



Split Switches.

Consisting of two Switch Points, two Bridle Bars, four Rail Braces and six Slide Plates.

Design No. 101.

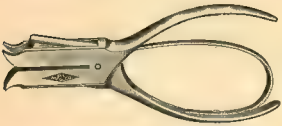
Length, feet	6	7½	10	12	15
8-lb. Rail, each	$ 8 70	.....	.....	.....	.....
12-lb. " "	9.30	.....	.....	.....	.....
16-lb. " "	9.90	.....	.....	.....	.....
20-lb. " "	10.55	.....	.....	.....	
25-lb		11 65	12 70	14 90	17 80
30-lb "		12 60	13 80	14 90	18 85
35-lb "		13 80	15 15	15 95	19 90
40-lb "		14 50	15 95	17 75	21 85

Approximate Weights.

Size Rail	8 lbs.	12 lbs.	16 lbs.	20 lbs.	25 lbs.	30 lbs.	35 lbs.	40 lbs.
6 feet long, lbs	117	130	150	175	.....	.....	.....	.....
7½ " " "	.....	.....	.....	.....	200	225	225	250
10 " " "	.....	.....	.....	.....	225	250	300	325

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Ticket and Conductors' Punches



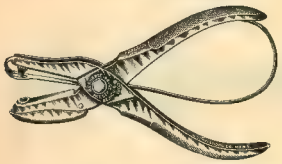
The "Traction" Punch.

Steel spring. Cuts 1 inch from edge. Nicely nicely nickel-plated and each in neat paper box.

Per dozen.

No. 28¾A—Assorted Fancy Designs $32 50

Each in a Box



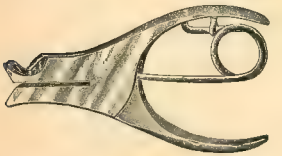
Reservoir Ticket Punch.

Simple, cheap and durable, full nickel plated. Especially useful for card parties. The reservoir, which opens and shuts with a spring, retains the chippings, not allowing them to scatter over the floor. This feature is appreciated by the housewife

Per dozen

No. 260—Six Assorted Designs..... $4 50

Each in a Box



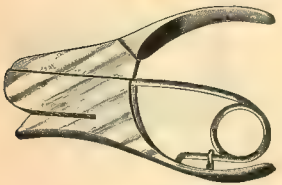
Conductors' Punch.

Handsomely finished and full nickel-plated Strong steel spring. 1¼-inch reach, 4¼ inches long

Per dozen.

No. 2591 -Assorted Designs..... $28.00

Each in a Box.



Conductors' Punch.

This is the regular Conductors' Punch Finely finished and full nickel-plated. Strong spring and very durable. 1-inch reach, 4 inches long

Per dozen

No. 2590—Assorted Designs.... ... $35 00

Each in a Box.

Bond Punch.

This Punch is made with a ¼-inch round die, specially suited for punching bonds. Two-inch reach, 5 inches long. Fine nickel-plated, strong and durable

Per dozen

No. 2870B—Round Die..... $35.00

Each in a Box

EIGHT DAY MARINE AND LOCOMOTIVE CLOCKS

FIG 868.

FIG 869.

For Ships, Steamers, Yachts, Locomotives, Engine Rooms or other places where Pendulum Clocks cannot be used on account of vibration.

Movements finely finished throughout with jeweled escapement and chronometer balance. They may be adjusted upon order, and will then fulfil all requirements of a chronometer.

Fig. 868 and Fig. 869 are made with dials 4½, 6, 8, 10 and 12 inches in diameter. The 4½ inch, 6 inch and 8 inch have porcelain enameled dials. The 10 inch and 12 inch have silvered or white enameled metal dials.

The Fig. 868 cases are made of heavy metal finished in polished brass, copper or nickel; the Fig. 869 cases are made of wood to match other furniture.

FIG. 868

Size Dial.....inch	$4\frac{1}{2}$	6	8	10	12
Price.....each	$20.00	40.00	60.00	75.00	90.00

FIG. 869

12 inch Dial.....each	$35.00
14 " " Electric Secondary Clock....."	40.00

NO. 89 RAILROAD REGULATOR

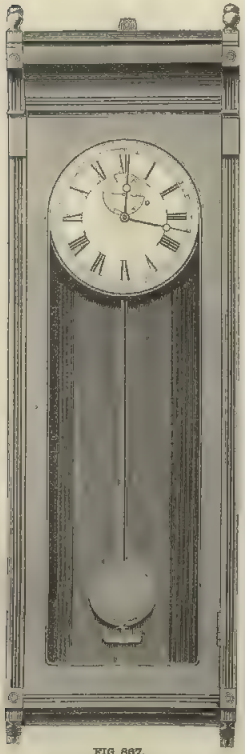


FIG. 867.

Railroad Regulators are, as a rule, subjected to more exposure to the changes of weather than almost any other regulator in use, and it is important that they be as accurate and reliable as those in service in less exposed positions. The regulators are so constructed that the warping of the case, caused by wet and dry, cold and warm weather, can have but little, if any, effect on the time-keeping qualities of the movement.

The dial is attached to the movement, and does not come in contact with the case. The pendulum is made with a rod of seasoned cherry with heavy bob of brass filled with zinc for compensation, and is carefully suspended by a double spring from the top of the movement.

A Watchmaker wanting a low-price regulator cannot find the equal of this clock for the money.

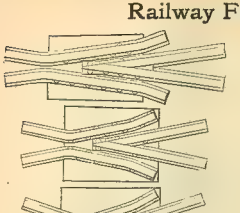
Movement with Graham Dead Beat Escapement, enameled Zinc Dial 12 inches in diameter.

Case of Oak, 5 feet 5 inches long.

Made to order in Cherry or Mahogany.

No. 89—With 12-inch dial..... $75 00
" 89—With minute contact for operating secondary clocks..... ..... 100.00

Railway Frogs and Switches



Light T Rail Frogs on Riveted Plates.

Design No. 56.

No.	4	5	6	7	8	9
8-lb. Rail, each	$ 9.60	9.85	10 15			
12-lb. " "	10.00	10.30	10 65			
16-lb. " "	10.40	10.75	11.00			
20-lb. " "	10.85	11.10	11 45			
25-lb. " "	11.40	11.65	12.00	12.40	13.55	14.70
30-lb " "	12.15	12 50	12 70	13.20	14.55	16.05
35-lb. " "	13.50	13 80	14.10	14.50	15.70	17.40
40-lb. " "	14.25	14.55	14 95	15.40	16.80	18.75

Approximate Weights.

Size Rail	8 lb	12 lb.	16 lb.	20 lb.	25 lb.	30 lb.	35 lb.	40 lb.
No. 4	100	105	110	130	150	175	200	225
No. 5	100	105	110	140	160	200	225	250
No. 6	100	105	120	140	160	225	250	275

Stiff Bolted Filled Frogs.

With Cast Iron Fillers.

Design No. 76.

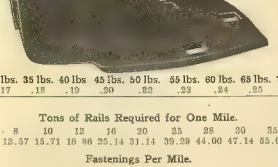
Size Rail	45 lbs.	50 lbs.	56 lbs.	60 lbs.
No. 4—Each	$13.05	13.75	14.70	15.65
No. 5— "	13.95	15.05	16.05	17.05
No. 6— "	15.05	16.05	17.40	18.60
No. 7— "	16.05	17.55	18.75	20.10
No. 8— "	17.05	18.75	20 15	21 65
No. 9— "	18.25	19.90	21 40	23 15
No. 10— "	19.45	21.05	22 90	24 75

Approximate Weights.

Size Rail	45 lbs.	50 lbs.	56 lbs.	60 lbs.
No. 4	250	275	300	325
No. 5	275	300	325	350
No. 6	300	325	375	400
No. 7	375	450	400	425
No. 8	350	375	425	450
No. 9	375	425	475	500
No. 10	475	475	525	575

With Rolled Steel Fillers add 10 per cent. to above price.

Pressed Steel Rail Braces, No. 202.



For Rail	20 lbs.	25 lbs.	30 lbs.	35 lbs.	40 lbs	45 lbs.	50 lbs.	55 lbs.	60 lbs.	65 lbs.	70 lbs.	75 lbs.	80 lbs.	85 lbs.
Each	$0 16	.17	.17	.18	.19	.20	.22	.23	.24	.25	.26	.27	.28	.29

Tons of Rails Required for One Mile.

Weight per Yard, pounds	8	10	12	16	20	25	28	30	35	40	45	56	60
Tons per Mile	12.57	15.71	18 86	25.14	31.14	39.29	44.00	47.14	55.00	62.86	70 71	88.00	94.30

Fastenings Per Mile.

	18	20	22	24	26	28	30
Length of Rails, feet	587	528	480	440	406	377	352
Number of Joints	1,174	1,056	960	880	812	754	704
Number of Splice Bars	2,348	2,112	1,980	1,760	1,624	1,508	1,408
Number of Bolts	11,740	11,616	11,520	11,440	11,372	11,314	11,264
Number of Spikes							

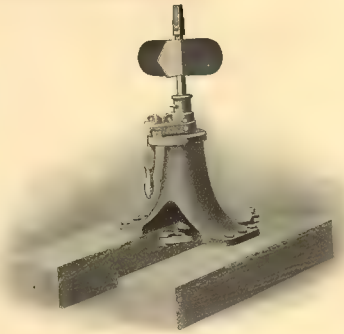
Cross Ties for One Mile

	1½	1¾	2	2¼	2½
Center to Center, feet	3,520	3,017	2,640	2,348	2,113
Number Ties					

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Switch Stands

No. 152.



No. 171.

	Each.
No. 152—High Target. Main Line Switch Stand. With Connecting Rod. Weight, 245 pounds	$19 00
No. 171—Low Target Pony. With Connecting Rod. Weight about 245 pounds	13.75

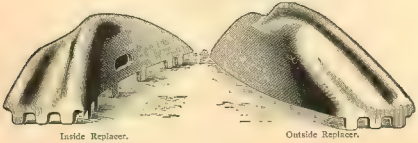
Ball Ground Throws

Light Ball Pattern.

Heavy Ball Pattern.

	Each
No. 181—Light Ball Throw. Weight 33 pounds	$4 00
**No. 180—Heavy " " " 75 " **	6 00

Car Replacers



Inside Replacer. Outside Replacer.

These Replacers are light in weight but guaranteed to rerail the heaviest equipment. They will save many times their cost in a single derailment. Made from 9/16 in. Steel Plate.

	Per pair.
No. 1—For 6-inch Rail. Weight 150 pounds per pair	$17 00
No. 2—For Rail from 4½ to 5½ inches high. Weight 140 pounds per pair	16.00
No. 3—For Rail under 4½ inches high. Weight 80 pounds per pair	12.00

Track Jacks

Barrett Trip Jacks.

Has a lifting capacity of 10 tons. The leverage is compound, double-acting, lifting the load half a notch on both upward and downward strokes. Load can be instantly dropped from any elevation at will of operator. It is positive, speedy and durable This is the recognized standard Track Jack, and has been adopted by the leading railroads of America. Its construction conforms strictly to the requirements of the Roadmasters' Association, and it is specifically recommended by them in their report of September, 1902 We recommend Trip Jacks for track work only.

Height bar down, 24 inches. Rise of bar, 13½ inches. Total height, bar raised, 37½ inches.

Each

No. 1—Capacity, 10 Tons Bar, 1½ x 1½ inches. Weight, 62 pounds..... $18.00

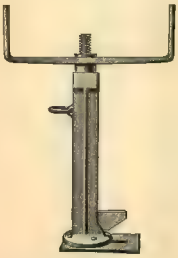
Barrett Automatic Lowering Jack.

This is certainly a most popular and useful Jack, being suitable for all general lifting purposes. It is the recognized standard for electric street railway lines, being used in track construction, also as a car Jack in cases of emergency, such as derailment or accident where cars have to be lifted quickly and lowered gradually. Its operation is easy and simple. The load is moved up or down half a notch at each stroke on both upward and downward movements of the lever. The direction is easily controlled by the eccentric at side of the frame. It has no trip, consequently cannot drop a load through carelessness. The capacity is 10 tons. A number of electric railway companies have made this Jack part of the equipment of each car and report gratifying results. This Jack will operate at any angle.

Height, bar down, 21 inches. Rise of bar, 10 inches. Total height, bar raised, 31 inches

Each

No. 2—Capacity, 10 Tons Bar, 1⅝ x 1¼ inches. Weight, 65 pounds $25.00



Track Jack Screw.

The screw, base and handle of this Jack are made of wrought iron. The lifter is welded to the screw. Length of screw, 18 inches.

Each.

Track Jack Screw. Capacity, 12 Tons. Diameter of Screw, 1½ inches.. ..... $13.00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Lever Jacks

Barret Track or Trip Jacks.

This Jack is a double acting compound lever Jack, raising the load half a notch on both up and down strokes. It is similar to the No. 1 but shorter, having the same capacity, being especially designed to meet the requirements for a small Jack with limited raise. We recommend Trip Jacks for track work only

Height, bar down, 17¾ inches. Rise of Bar, 8 inches. Total height, bar raised, 25¾ inches.

	Each
No. 12—Capacity 10 Tons. Bar 1½ x 1½ inches. Weight 50 pounds	$17 00

Barret Automatic Lowering Jacks.

One of the most substantial and powerful Jacks made. Its lifting capacity is 15 tons. Its broad area and stout appearance indicates that it is constructed for heavy service. The frame and bar are both unusually heavy, with all working parts in proportion The lever raises or lowers the load on both upward or downward stroke. The direction is controlled by the eccentric at the side of frame This Jack will operate at any angle.

Height, bar down, 22 inches. Rise of bar, 10 inches. Total height, bar raised, 32 inches

	Each
No. 4—Capacity 15 Tons Bar 2 x 2 inches Weight 106 pounds	$35 00

Barret Automatic Lowering Jacks.

This Jack covers a wide field of adaptation and is designed for general lifting purposes It is particularly adapted to the rapid handling of mining machinery, mine cars, agricultural machinery and light or narrow gauge track It is also suitable for machine shop work and may, in fact, be readily applied to any load within the range of its capacity. This Jack is double acting, light in weight and has a quick positive action

Height, bar down, 16 inches. Rise of bar, 8 inches. Total height, bar raised, 24 inches.

	Each.
No. 50—Capacity 5 tons Bar 1¼ x 1¼ inches Weight 33 pounds	$16.00

No. 51 Jack is the same as No. 50 in all respects, except that it stands 5 inches higher This size has all the features and covers the same purposes as No 50, but is designed to meet conditions where a higher range of lift is required. These Jacks operate at any angle

Height, bar down, 21 inches. Rise of bar, 13 inches. Total height, bar raised, 34 inches.

	Each
No. 51 -Capacity 5 Tons Bar 1¼ x 1¼ inches. Weight 40 pounds	$18.00

REACH BASE BALL GOODS

MASKS

No. 1S

Fig. 9086A

No. 50S

Fig. 9086B

No. XX

Fig. 9086C

Price, No. 1S Catchers' Mask, "Special Largest" Heavy Steel Wire, Gun Metal Finished Full Length, Hair Filled Black Leather Side and Head Pads		each	2.50
" No. 50S Amateur Mask, Full Size, Steel Wire, Black Enameled, Padded, Sunshade		"	1.50
" No. XX Amateur Mask, Hair Filled Leather and Canvas Head and Side Pads		"	1.00

BASE BALL BATS

No. 2M

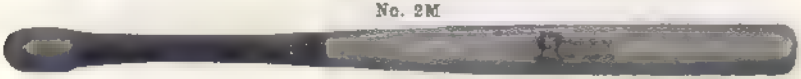


Fig. 9086D

No. 1M

Fig. 9086E

Price, No. 2M Patent Bronze Bat, Special Weight, Finest, Taped Handle each			1.00
" No. 1M same as above but Burnt Finish Plain Handle		"	1.00

No. 3 0

Fig. 9086F

No. 84

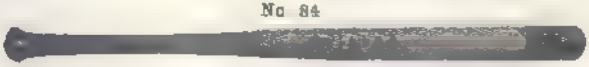


Fig. 9086G

Price, No. 3-0 Special Bats, Second Growth White Ash, Hand Turned, Burnt and Burnished		each	.75
" No. 81 Men's Bats, White Ash, Burnt Finish		"	50
" No. 82 " " " Special Green Tinted Finish, Good Grade Ash		"	35
" No. 84 Boys' Bats, Highly Polished Ash, Brown Head, 31 inches long		"	15
" No. 87 Boys' Bats, Polished Ash, Green Tinted Finish with Black Knob		"	10

REACH BASE BALL GOODS

CATCHERS' MITT
No. 30

Fig. 9077A

CATCHERS' MITT
No. B. P.

Fig. 9077B

CATCHERS' MITT
No. 20N

Fig. 9077C

Price, No. 30 Half Lined Catchers Mitts, Face and Fingers Dark Brown Split Skin, Strap and Back Brown Calfskin, Laced Thumb, Deep Pocket, Strap and Buckle at Wrist, Assorted Felt Pad ..... each 4 00

" No. B. P. Laced Catchers' Mitts, Face and Fingers Brown Buck Skin, Strap and Back Dear Colored Calfskin, Laced Thumb Deep Pocket, ... " 3 00

" No. 20N Laced Catchers' Mitts, Face and Fingers Black Calfskin Back Brown Tan Leather, Strap Olive Tan Leather Laced Thumb, Deep Pocket, Strap and Buckle at Wrist ..... " 2 00

CATCHERS' MITT
No. 150

Fig. 9077D

CATCHERS' MITT
No. FP

Fig. 9077E

CATCHERS' MITT
No. GP

Fig. 9077F

Price No. 150 Laced Catchers Mitts, Face and Colored Calfskin, Back Fingers and Strap Olive Tan Leather, Patent Laced Thumb Deep Pocket, Strap and Buckle at Wrist ..... each 1.50

" No. FP Laced Catchers' Mitts, Face, Back and Fingers Drab Finish Calfskin, Strip Olive Tan Leather, Patent Laced Thumb, Deep Pocket, Strap and Buckle at Wrist ..... " 1 00

" No. GP Youths' Catchers Mitts, Face and Fingers Olive Tan Leather Back and Strap Drab Finish Calfskin, Patent Laced Thumb and Deep Pocket ..... " .50

REACH BASE BALL GOODS

FIELDERS' GLOVES

No. OBL

Fig. 9079A

No. 01

Fig. 9079B

No. OOW

Fig. 9079C

Price, No. OBL Fielders' Gloves, Drab Buckskin, Leather Lined and Welted.....each | 3.50
" No. 01 Fielders' Gloves, Black Calfskin, Felt Lined, Heavy Padded.....“ 3.00
" No. OOW Fielders' Gloves, Mouse Colored, Buckskin Asbestos Felt Padded, Welted Web Thumb, Leather Lined.....“ 2.50

No 3 G

Fig. 9079D

No 10 N

Fig 9079E

No. 12 G

Fig. 9079F

Price, No, 3 G Fielders' Gloves, Drab Suede Buckskin, Felt Padded, Deep Pocket, Web Thumb.....each | 1.50
" No 10 N Fielders Gloves, Black Tan Leather, Felt Padded, Web Thumb, Deep Pocket.....“ 1.00
" No. 12 G Fielders' Gloves, Brown Suede Calfskin, Patent Inside Hump, Web Thumb, Deep Pocket.....“ .50

REACH BASE BALL GOODS

FIRST BASEMEN'S MITTS

No. 3

Fig. 9078A

No. 4 L

Fig. 9078B

No. R

Fig. 9078C

Price,	No. 3 First Basemen's Mitts, Drab Buckskin	each	1.00
"	" 4L Laced First Basemen's Mitts, Heavy Ecru Calfskin	"	3.00
"	" R First Basemen's Mitts, Face Heavy Mouse Colored Buckskin, Back and Lining, Brown Tan Leather	"	2.00

All above Mitts fitted with Patent Lacing Device, Laced Thumb, Extra Hump, Deep Pocket, Strap and Buckle at Wrist.

FIRST BASEMEN'S AND FIELDERS' MITTS

No. 2R

Fig. 9078D

No. 3R

Fig. 9078E

No. 6N

Fig. 9078F

Price,	No. 2R First Basemen's Mitts, Brown Tan Leather	each	1.00
"	" 3R " " " Crown Tan Leather	"	1.00
"	" 6N Fielders' Mitts, Black Calfskin, Welted. Padded with Asbestos Felt, Strap and Buckle at Wrist	"	2.00
"	" 8F Pearl Mitts, Black Calfskin, Welted, Padded with Asbestos Felt, Strap and Buckle at Wrist	"	1.50
"	" 7F Pearl Colored Calfskin Face, Brown Leather Back Strap and Buckle at Wrist	"	1.00
"	" 7B Youths' Fielders' Mitts, Pearl Colored Sheepskin, Felt Lined well Padded		.50

Fine Imported Cottage Barometers, Miniature, Cuckoo and Novelty Clocks

Prices Each

COTTAGE BAROMETER

Made of fancy carved wood, with thermometer. Height 9 inches, width 6 inches. Indicates the weather six to eight hours ahead. In good weather lady appears, in bad weather man appears.
No. 6137 Each $2 75

COTTAGE BAROMETER (Wetterhausie)

Made of wood, neatly painted, with gravel roof and thermometer. Height 6¾ inches, width 5⅞ inches. Indicates the weather six to eight hours ahead. In good weather lady appears, in bad weather man appears.
No. 6138 Each $2.90

MINIATURE CUCKOO CLOCK

Height 13 inches, width 8¼ inches, dial 3¼ inches. Half-hour cuckoo call. Imitation walnut case, small size movement. Each clock packed with two weights in strong pasteboard box. A reliable clock for the money
No. 6139 Each $7 25

MINIATURE CLOCK

Height 8 inches, width 5 inches. Solid walnut or oak with patent celluloid dial
No. 6140 Each $2 70

MINIATURE CLOCK

Height 7 inches, width 4¼ inches. Wood front, old style movement. Walnut or oak colors.
No. 6141 Each . . . $1 05

MANTEL CUCKOO CLOCK

Height 16 inches, width 12 inches. Solid oak case. One-day spring movement. Half-hour call.
No. 6142 Each $10.35

GLOBE CLOCK

Height 14 inches, globe 7½ inches in diameter. Nickel case, one-day lever time. The globe moves and indicates twenty-four hours showing correct time of every city in the world.
No. 6144 Each $16 00

NURSERY OR KITCHEN CLOCK

Porcelain enameled front, 8¾ inches. Dutch designs in blue Delft. One-day lever time movement. Dust and damp proof. Natural landscape colors.
No. 6143 Each $4.70

NURSERY OR KITCHEN CLOCK

Porcelain enameled dial, 9 inches. Oak or grey frame, 12½ inches. Dutch designs in blue Delft figures. One-day lever time movement. Dust and damp proof.
No. 6145 Each $6.00

New Haven Clock Co.'s Fine Automobile Wood and Metal Lever Clocks

GUARANTEED ACCURATE TIMEKEEPERS. PRICES EACH.

JERICHO—(Automobile).

Heavy brass case with off-set, dust and water proof, height 4 ¼ inches, width 4 ¼ inches, 3 inch porcelain dial, eight-day time movement.

No. 6146 Brass. Each $0.95
No. 6147 Brass, Nickel finish. Each 9.95
No. 6148 " Gun metal " " 9.95

Clock attaches to car by locking device, easily and quickly operated.

ENGINE LEVER.

Heavy brass case, dust and water proof, height 6 inches, width 5 inches, 3-inch porcelain dial, eight-day time movement.

No. 6149 Brass. Each $12.60
No. 6150 Nickel finish. Each 12.60

DUANE.

Heavy brass case, with off-set holding a complete watch; polished brass, nickel or gun metal finish, height 3½ inches, width 2 ¾ inches, dial 1½ inches, one-day time movement.

No. 6151 Brass. Each $3.90
No. 6152 " Nickel finish. Each 3.90
No. 6153 " Silver finish. " 3.90

GALLERY

GALLERY—14-inch Dial.

Solid Oak or Walnut, 14-inch dial, diameter of case, 21½ inches.

No. 6154 Eight-day time. Each $24.15
No. 6155 Thirty-day time. " 27.35

GALLERY 18-inch Dial.

Solid Oak or Walnut, 18-inch dial, diameter of case, 25½ inches.

No. 6156 Eight-day time. Each $28.80
No. 6157 Thirty-day time. " 31.90

HARMONICAS

NO 3209

No. **3209 Boss Richter,** 10 Single Holes, 20 Reeds Per doz. .90

One dozen in a Package.

NO. 3208
10 Single Holes, 20 Reeds.

No. **3208 Popular Richter** .Per dozen $1.50

Half dozen in a Package.

NO. 01
10 Single Holes, 20 Reeds.

No. **01 "Sport"**.....Per dozen $2.00

Half dozen in a Package.

NO. 33
10 Single Holes, 20 Silver Reeds.

No. **33 Genuine Richter** .....Per dozen $2.50

Half dozen in a Package.

NO. 34 B
10 Single Holes, 20 Silver Reeds.

No. **34B Genuine Hohner**..... Per dozen $4.00

Half dozen in a Package.

NO 8 AND 1896
10 Double Holes, 40 Silver Reeds.

No. **8 Full Concert**..... Per dozen $7.00
" **1896 Marine Band** " " 9.00

Half dozen in a Package.

NO. 557
20 Double Holes, 40 Silver Reeds.

No **557 Tremolo** (Extra Long).....Per dozen $8.00

Half dozen in a Package.

NO. 3 C. N. D.
10 Double Holes, 40 Silver Reeds.

No. **3 C. N. D. Full Concert** .Per dozen $9.00

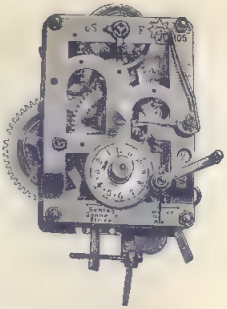
Half dozen in a Package.

FINE IMPORTED MUSIC CLOCKS

GUARANTEED ACCURATE TIMEKEEPERS

All Orders Filled Same Day Received

No Delay



Movement

MUSIC CLOCK (Rocca.)

Walnut case. Height, 11½ inches; width, 9 inches. The clock plays a tune at the full hour, or can be used as an alarm clock by changing the music lever, and then will play twenty-four hours instead of ringing a bell. Six cylinders of different music with each clock.

No 5712 Each..... .....$14 00

How to Insert Cylinder.

MANTEL CLOCK, WITH EIGHT-DAY MUSIC ATTACHMENT

Polished black wood case inlaid with gold. Height, 13½ inches; width, 12½ inches. 6-inch ivory finished dial. Four airs; plays two tunes every hour; plays and runs eight days with one winding. The first mantel music clock made of this kind.

No. 5713 Each $20 00

JOKER MUSIC ALARM CLOCK.

(With 36 teeth in music box.)

Gold gilt front and handle, nickel-plated frame and glass sides. Height, 7 inches; width, 5 inches. This clock plays one tune for about ten minutes instead of ringing a bell.

No. 5714 Each. $6 40

"ROGERS NICKEL SILVER" FLATWARE

Manufactured by the Wm. ROGERS MFG. CO.

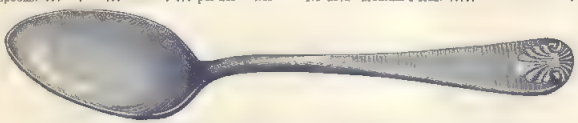
Warranted to contain 18 per cent Nickel Silver and to be Pure Metal throughout. Packed six in a package and two dozen in a box. All stamped "Rogers Nickel Silver."

TIPPED PATTERN Extra heavy and light weights.

No. 2363	Tea Spoons, extra heavy weight	per doz $2.00	No. 2367	Table Spoons, light weight	per doz $2.60
No. 2364	Tea Spoons, light weight	per doz 1.30	No. 2368	Dessert Forks, extra heavy weight	per doz 3.15
No. 2365	Dessert Spoons, extra heavy weight	per doz 3.15		Light weight Dessert Forks not made.	
	Light weight Dessert Spoons not made.		No. 2369	Medium Forks, extra heavy weight	per doz 4.00
No. 2366	Table Spoons, extra heavy weight	per doz 4.00	No. 2370	Medium Forks, light weight	per doz 2.60

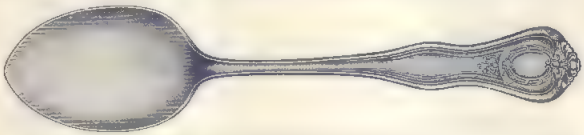
WINDSOR PATTERN -Extra heavy weight.

No. 2371	Tea Spoons	per doz $2.00	No. 2373	Table Spoons	per doz $4.00
No. 2372	Dessert Spoons	per doz 3.15	No. 2374	Medium Forks	per doz 4.00



SHELL PATTERN—Light weight only.

No. 2375	Tea Spoons	per doz $1.30	No. 2377	Medium Forks	per doz $2.60
No. 2376	Table Spoons	per doz 2.60			



SIGNET PATTERN Light weight only

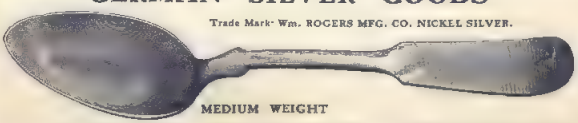
No. 2378	Tea Spoons	per doz $1.30	No. 2381	Dessert Forks	per doz $2.30
No. 2379	Dessert Spoons	per doz 2.30	No. 2382	Medium Forks	per doz 2.60
No. 2380	Table Spoons	per doz 2.60			

OVAL BEADED PATTERN—Medium weight only

No. 2383	Tea Spoons	per doz $1.60	No. 2385	Table Spoons	per doz $3.20
No. 2384	Dessert Spoons	per doz 2.70	No. 2386	Medium Forks	per doz 3.20

GERMAN SILVER GOODS

Trade Mark- Wm. ROGERS MFG. CO. NICKEL SILVER.



MEDIUM WEIGHT

TIPPED PATTERN Warranted to contain 18% pure nickel silver. These goods are tied up in sets of six.

No. 2387	Tipped Tea Spoons	per doz $1.60	No. 2390	Tipped Dessert Forks	per doz $2.70
No. 2388	Tipped Dessert Spoons	per doz 2.70			
No. 2389	Tipped Table Spoons	per doz 3.20	No. 2391	Tipped Medium Forks	per doz 3.20

MEDIUM PRICED SILVER PLATED FLATWARE

PRICES QUOTED ARE PER DOZEN

The Goods on this page are Half Standard Plate on 10 per cent Nickel Silver Base. Well finished and put up in attractive packages. Stamped H. & T. Mfg. Co. A1.

TIPPED PATTERN

No. 2332	Tea Spoons	per doz $3.50	No 2335	Medium Forks	per doz $5.00
No. 2333	Dessert Spoons	per doz 4.50	No. 2336	Dessert Forks	per doz 4.50
No. 2334	Table Spoons	per doz 5.00	No. 2337	Butter Knives	per doz 5.00
			No 2338	Sugar Shells	per doz 4.50

SHELL PATTERN.

No. 2339	Tea Spoons	per doz $2.50	No. 2342	Medium Forks	per doz $5.00
No. 2340	Dessert Spoons	per doz 4.50	No. 2343	Dessert Forks	per doz 4.50
No. 2341	Table Spoons	per doz 5.00	No. 2344	Butter Knives	per doz 5.00
			No. 2345	Sugar Shells	per doz 4.50

CORONA PATTERN French Gray.

No. 2346	Tea Spoons	per doz $2.50	No 2349	Medium Forks	per doz $5.00
No. 2347	Dessert Spoons	per doz 4.50	No 2350	Dessert Forks	per doz 4.50
No. 2348	Table Spoons	per doz 5.00	No. 2351	Butter Knives	per doz 5.00
			No. 2352	Sugar Shells	per doz 4.50

LORAINE PATTERN.

No. 2353	Tea Spoons	per doz $2.50	No 2356	Medium Forks	per doz $5 00
No. 2354	Dessert Spoons	per doz 4 50	No. 2357	Dessert Forks	per doz 4.50
No. 2355	Table Spoons	per doz 5 00	No. 2358	Butter Knives	per doz 5 00
			No. 2359	Sugar Shells	per doz 4.50

No. 2360	Round end, Plain Medium Knives, plated on fine steel	per doz $6 15
No. 2361	Round end, Plain Medium Forks, plated on fine steel	per doz 6.15

No. 2362	Loraine Pattern, Medium Knives	per doz $6.40
	Loraine Pattern, Medium Forks	See No 2356

The Old Original and Genuine Anchor Brand Flatware

Unsurpassed in Plate Workmanship and Beauty of design

Plated with Full Weight Pure Silver on Best Quality Nickel Silver.

PRICES PER DOZEN.

THE ORIGINAL AND GENUINE ROGERS SILVER-PLATED WARE

Manufactured by the WM. ROGERS MANUFACTURING CO. Hartford, Conn.

On the Market for over 40 Years. Every Package Carries a Guarantee.

[illegible] PATTERN

No.	Tea Spoons	Doz
2066	Al plate	$4.10
2067	Triple "	5.75

Dessert Spoons

2068	Al plate	$7.20
2069	Triple "	9.60

Table Spoons

2070	Al plate	$ 8.20
2071	Triple "	11.50

Dessert Forks

2072	Al plat.	$7.20
2073	Triple "	9.60

Medium Forks

2074	Al plate	$ 8.20
2075	Triple "	11.50

Twist Butters

2076	Al plate	$ 9.00
2077	Triple "	13.45

Sugar Shells

2078	Al plate	$7.70
2079	Triple "	9.60

[illegible]

2080	Al Cream	$10.10
2081	" Gravy	14.40
2082	" Oyster	31.70
2083	" Medium	40.35
2084	" Soup	43.20

Fancy pieces not made in Tipped pattern

Can furnish Shell pattern at same price as Tipped.

[illegible] PATTERN

No.	Tea Spoons	Doz
2085	Al plate	$4.75
2086	Triple "	6.25

Dessert Spoons

2087	Al plate	$ 8.15
2088	Triple "	10.55

Table Spoons

2089	Al plate	$ 9.10
2090	Triple "	12.50

Dessert Forks

2091	Al plate	$ 8.15
2092	Triple "	10.55

Medium Forks

2093	Al plate	$ 9.10
2094	Triple "	12.50

Soup Spoons

2095	Al plat	$9.10

Twist Butters

2096	Al plate	$10.10
2097	Triple "	13.90

Sugar Shells

2098	Al plate	$ 8.65
2099	Triple "	10.55

Butter Spreaders

2100	Al plate	$8.15

Oyster Forks

2101	Al plate	$8.05

[illegible]

2102	Al Cream	$13.00
2103	" Gravy	17.30
2104	" Oyster	37.45
2105	" Medium	46.10
2106	" Soup	49.00

Knives

2107	Al Pie	$28.80
2108	" Cake	23.05

Spoons

2109	Al Coffee	$ 4.50
2110	" Orange	5.75
2111	" Berry	23.05
2112	" Berry gilt	31.70

ARGYLE PATTERN

No.	Tea Spoons	Doz
2113	Al plate	$4.55
2114	Triple "	6.25

Dessert Spoons

2115	Al plat	$ 8.15
2116	Triple "	10.55

Table Spoons

2117	Al plate	$ 9.10
2118	Triple "	12.50

Dessert Forks

2119	Al plate	$ 8.15
2120	Triple "	10.55

Medium Forks

2121	Al plate	$ 9.10
2122	Triple "	12.50

Soup Spoons

2123	Al plate	$9.10

Twist Butters

2124	Al plate	$10.10
2125	Triple "	13.90

Sugar Shells

2126	Al plate	$ 8.65
2127	Triple "	10.55

Butter Spreaders

2128	Al plate	$8.15

Oyster Forks

2129	Al plate	$8.05

Ladles

2130	Al Cream	$13.00
2131	" Gravy	17.30
2132	" Oyster	37.45
2133	" Medium	46.10
2134	" Soup	49.00

Knives

2135	Al Pie	$28.80
2136	" Cake	23.05

Spoons

2137	Al Coffee	$ 4.50
2138	" Orange	5.75
2139	" Berry	23.05
2140	" Berry gilt	31.70

ALHAMBRA PATTERN

No.	Tea Spoons	Doz
2142	Al plate	$4.55
2143	Triple "	6.25

Dessert Spoons

2144	Al plate	$ 8.15
2145	Triple "	10.55

Table Spoons

2145	Al plate	$ 9.10
2147	Triple "	12.50

Dessert Forks

2148	Al plate	$ 8.15
2149	Triple "	10.55

Medium Forks

2150	Al plate	$ 9.10
2151	Triple "	12.50

Soup Spoons

2152	Al plate	$9.10

Twist Butters

2153	Al plate	$10.10
2154	Triple "	13.90

Sugar Shells

2155	Al plate	$ 8.65
2156	Triple "	$10.55

Butter Spreaders

2157	Al plate	$8.15

Oyster Forks

2158	Al plate	$8.05

Ladles

2159	Al Cream	$13.00
2160	" Gravy	17.30
2161	" Oyster	37.45
2162	" Medium	46.10
2163	" Soup	49.00

Knives

2164	Al Pie	$28.80
2165	" Cake	23.05

Spoons

2166	Al Coffee	$ 4.50
2167	" Orange	5.75
2168	" Berry	23.05
2169	" Berry gilt	31.70

LEXINGTON PATTERN

No.	Tea Spoons	Doz
2171	Al plate	$4.55
2172	Triple "	6.25

Dessert Spoons

2175	Al plate	$ 8.15
2176	Triple "	10.55

Table Spoons

2176	Al plate	$ 9.10
2178	Triple "	12.50

Dessert Forks

2177	Al plate	$ 8.15
2178	Triple "	10.55

Medium Forks

2179	Al plate	$ 9.10
2180	Triple "	12.50

Soup Spoons

2181	Al plate	$9.10

Twist Butters

2182	Al plate	$10.10
2183	Triple "	13.90

Sugar Shells

2184	Al plate	$ 8.65
2185	Triple "	10.55

Butter Spreaders

2186	Al plate	$8.15

Oyster Forks

2187	Al plate	$8.05

Ladles

2188	Al Cream	$13.00
2189	" Gravy	17.30
2190	" Oyster	37.45
2191	" Medium	46.10
2192	" Soup	49.00

Knives

2193	Al Pie	$28.80
2194	" Cake	23.05

Spoons

2195	Al Coffee	$ 4.50
2196	" Orange	5.75
2197	" Berry	23.05
2198	" Berry gilt	31.70

BEAUTY PATTERN
French Gray Burnished Shield

No.	Tea Spoons	Doz
2199	Al plate	$4.55
2200	Triple "	6.25

Dessert Spoons

2201	Al plate	$ 8.15
2202	Triple "	10.55

Table Spoons

2203	Al plate	$ 9.10
2204	Triple "	12.50

Dessert Forks

2205	Al plate	$ 8.15
2206	Triple "	10.55

Medium Forks

2207	Al plate	$ 9.10
2208	Triple "	12.50

Soup Spoons

2209	Al plate	$9.10

Twist Butters

2210	Al plate	$10.10
2211	Triple "	13.90

Sugar Shells

2212	Al plate	$ 8.65
2213	Triple "	10.55

Butter Spreaders

2214	Al plate	$8.15

Oyster Forks

2215	Al plate	$8.05

Ladles

2216	Al Cream	$13.00
2217	" Gravy	17.30
2218	" Oyster	37.45
2219	" Medium	46.10
2220	" Soup	49.00

Knives

2221	Al Pie	$28.80
2222	" Cake	23.05

Spoons

2223	Al Coffee	$ 4.50
2224	" Orange	5.75
2225	" Berry	23.05
2226	" Berry gilt	31.70

WM. ROGERS & SON
TRADE MARK

MEDIUM PRICED SILVER PLATED FLATWARE

These Goods are Plated with Full Standard Plate on High Grade Nickel Silver Base. PRICES PER DOZEN.

TIPPED PATTERN
Made in A1 plate only

No.	Tea Spoons	Doz
2227	A1 plate	$3.15
	Dessert Spoons	
2228	A1 plate	$5.60
	Table Spoons	
2229	A1 plate	$6.30
	Medium Forks	
2230	A1 plate	$6.30
	Dessert Forks	
2231	A1 plate	$5.60
	Butter Knives	
2232	A1 plate	$6.30
	Sugar Shells	
2233	A1 plate	$5.60

Fancy Pieces not made in Tipped Pattern.

SHELL PATTERN
Made in A1 plate only

No.	Tea Spoons	Doz
2234	A1 plate	$3.15
	Dessert Spoons	
2235	A1 plate	$5.60
	Table Spoons	
2236	A1 plate	$6.30
	Dessert Forks	
2237	A1 plate	$5.60
	Medium Forks	
2238	A1 plate	$6.30
	Butter Knives	
2239	A1 plate	$6.30
	Sugar Shells	
2240	A1 plate	$5.60

Fancy Pieces not made in Shell Pattern.

ARBUTUS PATTERN
French Gray
Made in A1 plate only

No.	Tea Spoons	Doz
2241	A1 plate	$3.15
	Dessert Spoons	
2242	A1 plate	$5.60
	Table Spoons	
2243	A1 plate	$6.30
	Dessert Forks	
2244	A1 plate	$5.60
	Medium Forks	
2245	A1 plate	$6.30
	Butter Knives	
2246	A1 plate	$6.30
	Sugar Shells	
2247	A1 plate	$5.60
	Coffee Spoons	
2248	A1 plate	$4.30
2249	" gilt	7.10
	Oyster Forks	
2250	A1 plate	$5.75
	Ladles	
2251	A1 Cream	$12.50
2252	" " gilt	17.80
2253	" Gravy	16.40
2254	" " gilt	24.60
2255	" Oyster	35.55
2256	" " gilt	44.70
2257	" Medium	43.80
2258	" " gilt	54.75
	Berry Spoons	
2259	A1 plate	$21.90
2260	" gilt	30.15
	Cold Meat Forks	
2261	A1 plate	$13.70
2262	" gilt	19.15
	Jelly Servers	
2263	A1 plate	$16.40

FLOWER PATTERN
French Gray
Made in A1 plate only

No.	Tea Spoons	Doz
2264	A1 plate	$3.15
	Dessert Spoons	
2265	A1 plate	$5.60
	Table Spoons	
2266	A1 plate	$6.30
	Dessert Forks	
2267	A1 plate	$5.60
	Medium Forks	
2268	A1 plate	$6.30
	Butter Knives	
2269	A1 plate	$6.30
	Sugar Shells	
2270	A1 plate	$5.60
	Coffee Spoons	
2271	A1 plate	$4.30
2272	" gilt	7.10
	Oyster Forks	
2273	A1 plate	$5.75
	Ladles	
2274	A1 Cream	$12.50
2275	" " gilt	17.80
2276	" Gravy	16.40
2277	" " gilt	24.60
2278	" Oyster	35.55
2279	" " gilt	44.70
2280	" Medium	43.80
2281	" " gilt	54.75
	Berry Spoons	
2282	A1 plate	$21.90
2283	" gilt	30.15
	Cold Meat Forks	
2284	A1 plate	$13.70
2285	" gilt	19.15
	Jelly Servers	
2286	A1 plate	$16.40

FLORIDA PATTERN
Made in A1 plate only

No.	Tea Spoons	Doz
2287	A1 plate	$3.15
	Dessert Spoons	
2288	A1 plate	$5.60
	Table Spoons	
2289	A1 plate	$6.30
	Dessert Forks	
2290	A1 plate	$5.60
	Medium Forks	
2291	A1 plate	$6.30
	Butter Knives	
2292	A1 plate	$6.30
	Sugar Shells	
2293	A1 plate	$5.60
	Coffee Spoons	
2294	A1 plate	$4.30
2295	" gilt	7.10
	Oyster Forks	
2296	A1 plate	$5.75
	Ladles	
2297	A1 Cream	$12.50
2298	" " gilt	17.80
2299	" Gravy	16.40
2300	" " gilt	24.60
2301	" Oyster	35.55
2302	" " gilt	44.70
2303	" Medium	43.80
2304	" " gilt	54.75
	Berry Spoons	
2305	A1 plate	$21.90
2306	" gilt	30.15
	Cold Meat Forks	
2307	A1 plate	$13.70
2308	" gilt	$19.15

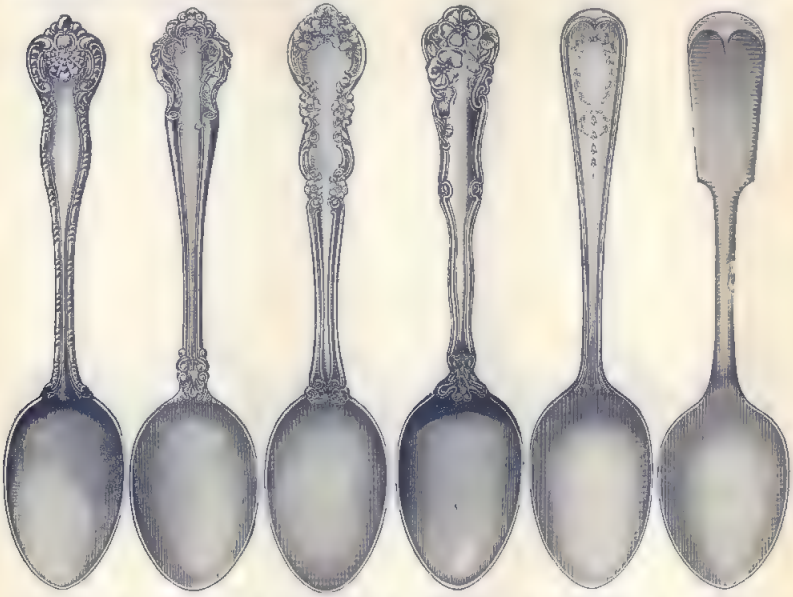
OXFORD PATTERN
Made in A1 plate only

No.	Tea Spoons	Doz
2309	A1 plate	$3.15
	Dessert Spoons	
2310	A1 plate	$5.60
	Table Spoons	
2311	A1 plate	$6.30
	Dessert Forks	
2312	A1 plate	$5.60
	Medium Forks	
2313	A1 plate	$6.30
	Butter Knives	
2314	A1 plate	$6.30
	Sugar Shells	
2315	A1 plate	$5.60
	Coffee Spoons	
2316	A1 plate	$4.30
2317	" gilt	7.10
	Oyster Forks	
2318	A1 plate	$5.75
	Ladles	
2319	A1 Cream	$12.50
2320	" " gilt	17.80
2321	" Gravy	16.40
2322	" " gilt	24.60
2323	" Oyster	35.55
2324	" " gilt	44.70
2325	" Medium	43.80
2326	" " gilt	54.75
	Berry Spoons	
2327	A1 plate	$21.90
2328	" gilt	30.15
	Cold Meat Forks	
2329	A1 plate	$13.70
2330	" gilt	19.15
	Jelly Servers	
2331	A1 plate	$16.40

FINE SILVER PLATED FLATWARE

XII Sectional and Triple Plated on 21 Per Cent Nickel Silver

Prices are Per Dozen Except Sugar Shells and Butter Knives



YORK PATTERN

Tea Spoons

No.		Per doz
1674	XII Plate	$ 28
1675	Triple "	7 22

Dessert Spoons

1676	XII Plate	$ 9 44
1677	Triple "	12.23

Table Spoons

1678	XII Plate	$10.56
1679	Triple "	14.44

Dessert Forks

1680	XII Plate	$ 9 44
1681	Triple "	12 23

Medium Forks

1682	XII Plate	$10 56
1683	Triple "	14.44

Sugar Shells

		Each
1684	XII Plate	$0.83

Butter Knives

1685	XII Plate	$0.97

CEDRIC FRENCH GRAY PATTERN

Tea Spoons

No.		Per doz
1686	XII Plate	$5 28
1687	Triple "	7 22

Dessert Spoons

1688	XII Plate	$ 9 44
1689	Triple "	12.23

Table Spoons

1690	XII Plate	$10.56
1691	Triple "	14.44

Dessert Forks

1692	XII Plate	$ 9.44
1693	Triple "	12.23

Medium Forks

1694	XII Plate	$10 56
1695	Triple "	14.44

Sugar Shells

		Each
1696	XII Plate	$0.83

Butter Knives

1697	XII Plate	$0.97

HARDWICK FRENCH GRAY PATTERN

Tea Spoons

No.		Per doz
1698	XII Plate	$5 28
1699	Triple "	7 22

Dessert Spoons

1700	XII Plate	$ 9 44
1701	Triple "	12.24

Table Spoons

1702	XII Plate	$10 56
1703	Triple "	14.44

Dessert Forks

1704	XII Plate	$ 9 44
1705	Triple "	12.23

Medium Forks

1706	XII Plate	$10.56
1707	Triple "	14.44

Sugar Shells

		Each
1708	XII Plate	$0.83

Butter Knives

1709	XII Plate	$0.97

BERWICK FRENCH GRAY PATTERN

Tea Spoons

No.		Per doz
1710	XII Plate	$5 28
1711	Triple "	7 22

Dessert Spoons

1712	XII Plate	$ 9 44
1713	Triple "	12.23

Table Spoons

1714	XII Plate	$10 56
1715	Triple "	14.44

Dessert Forks

1716	XII Plate	$ 9 44
1717	Triple "	12.23

Medium Forks

1718	XII Plate	$ 0.56
1719	Triple "	14 44

Sugar Shells

		Each
1720	XII Plate	$0 83

Butter Knives

1721	XII Plate	$0 97

GARRICK FRENCH GRAY PATTERN

Tea Spoons

No.		Per doz
1722	XII Plate	$ 28
1723	Triple "	7 22

Dessert Spoons

1724	XII Plate	$ 9.44
1725	Triple "	12 23

Table Spoons

1726	XII Plate	$10 56
1727	Triple "	14.44

Dessert Forks

1728	XII Plate	$ 9 44
1729	Triple "	12.23

Medium Forks

1730	XII Plate	$10 56
1731	Triple "	14.44

Sugar Shells

		Each
1732	XII Plate	$0.83

Butter Knives

1733	XII Plate	$0 97

TIPPED PATTERN

Tea Spoons

No.		Per doz
1734	XII Plate	$4.12
1735	Triple "	6 67

Dessert Spoons

1736	XII Plate	$ 8 33
1737	Triple "	11 12

Table Spoons

1738	XII Plate	$ 9 44
1739	Triple "	13.34

Dessert Forks

1740	XII Plate	$ 8 33
1741	Triple "	11.12

Medium Forks

1742	XII Plate	$ 9 44
1743	Triple "	13 34

FANCY PIECES NOT MADE IN TIPPED PATTERN

1835 R. WALLACE

Celebrated Silver Plated Flatware

PLATED ON 18 PER CENT NICKEL SILVER
QUALITY GUARANTEED

Silver Plate that RESISTS wear

In appearance it has the refinement of sterling silver.

The one grade of Plated Flatware that combines in the highest degree excellence of execution and sturdiness.

FLORAL PATTERN

French Gray.

Tea Spoons

No.	Per doz
1744 Triple plt.	$6.25

Dessert Spoons

1745 Triple plt. $10.55

Table Spoons

1746 Triple plt $12.50

Dessert Forks

1747 Triple plt $10.55

Medium Forks

1748 Triple plt $12.50

Twist Butters

1749 A1 plate $10.10

Sugar Shells

1750 A1 plate ..$8.65

CARDINAL PATTERN

French Gray.

Tea Spoons

No.	Per doz
1751 A1 plate	$4.55
1752 Triple "	6.25

Dessert Spoons

1753 A1 plate .$ 8.15
1754 Triple " 10.55

Table Spoons

1755 A1 plate $ 9.10
1756 Triple " 12.50

Dessert Forks

1757 A1 plate $ 8.15
1758 Triple " 10.55

Medium Forks

1759 A1 plate .$ 9.10
1760 Triple " . 12.50

Twist Butters

1761 A1 plate..$10.10

Sugar Shells

1762 A1 plate . $8.65

FROY PATTERN

Tea Spoons

No.	Per doz
1763 A1 plate	$4.55
1764 Triple "	6.25

Dessert Spoons

1765 A1 plate $ 8.15
1766 Triple " . 10.55

Table Spoons

1767 A1 plate $ 9.10
1768 Triple " 12.50

Dessert Forks

1769 A1 plate .$ 8.15
1770 Triple " 10.55

Medium Forks

1771 A1 plate $ 9.10
1772 Triple " . 12.50

Twist Butters

1773 A1 plate..$10.10

Sugar Shells

1774 A1 plate $8.65

MARQUETTE PATTERN

Tea Spoons

No.	Per doz
1775 A1 plate	$4.55
1776 Triple "	6.25

Dessert Spoons

1777 A1 plate $ 8.15
1778 Triple " . 10.55

Table Spoons

1779 A1 plate $ 9.10
1780 Triple " 12.50

Dessert Forks

1781 A1 plate .$ 8.15
1782 Triple " 10.55

Medium Forks

1783 A1 plate $ 9.10
1784 Triple " 12.50

Twist Butters

1785 A1 plate..$10.10

Sugar Shells

1786 A1 plate . $8.65

BLOSSOM PATTERN

French Gray.
Bright Shield

Tea Spoons

No.	Per doz
1787 A1 plate	$4.55
1788 Triple "	6.25

Dessert Spoons

1789 A1 plate $ 8.15
1790 Triple " 10.55

Table Spoons

1791 A1 plate $ 9.10
1792 Triple " 12.50

Dessert Forks

1793 A1 plate .$ 8.15
1794 Triple " 10.55

Medium Forks

1795 A1 plate .$ 9.10
1796 Triple " . 12.50

Twist Butters

1797 A1 plate $10.10

Sugar Shells

1798 A1 plate...$8.65

TIPPED PATTERN

Tea Spoons

No.	Per doz
1799 A1 plate	$4.10
1800 Triple "	5.75

Dessert Spoons

1801 A1 plate $7.20
1802 Triple " 9.90

Table Spoons

1803 A1 plate $ 8.20
1804 Triple " 11.50

Dessert Forks

1805 A1 plate $7.20
1806 Triple " 9.90

Medium Forks

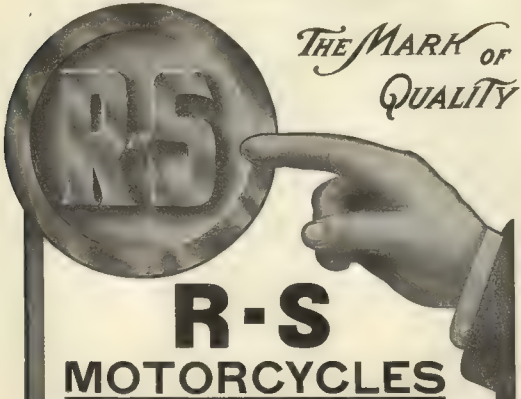
1807 A1 plate $ 8.20
1808 Triple " . 11.50

Twist Butters

1809 A1 plate...$9.60

Sugar Shells

1810 A1 plate...$7.70



THE MARK OF QUALITY

R-S
MOTORCYCLES

ARE

AMERICA'S BEST

There is nothing to beat it

READING STANDARD

means the Standard of Excellence in construction; material, design and workmanship the very best. The R-S is the Motorcycle for *every-day use*—The Real Stuff.

If such a Motorcycle appeals to you, write for catalog and information to

READING STANDARD CO.
READING, PA.

Makers of Renowned Reading Standard Bicycles

SMITH & WESSON REVOLVERS

NEW DEPARTURE HAMMERLESS

Fig. 8896A

New Departure Safety Hammerless Patent Automatic Ejector, Rebounding Lock, Rubber Handle. Shoots S. A. W. Central Fire Revolver Cartridges.

Price, 32 Calibre, 3½-inch Barrel, Nickeled or Blued	each	16.00
" 38 " 4 " " " "	"	17.00

SAFETY HAMMER, AUTOMATIC EJECTOR

Price, 32 Calibre, 3-inch Barrel, Nickeled or Blued	each	15.00
" 38 " 3½ " " " "	"	16.00

MODEL 1905 NEW POLICE

Fig. 8896B

Model 1905 Double Action Military and Police, Square Handle, Checked Wood Stocks. Shoots 32 W. C. F. and 38 S. & W. Special and 38 long Colts Cartridges.

Price, 32 Calibre, 4-inch Barrel, Nickeled or Blued	each	19.00
" 38 " 4 " " " "	"	19.00

STEVENS AND AIR RIFLES, SHOT, ETC.

STEVENS MAYNARD JUNIOR RIFLES

Fig. 8894A

Price, No. 15, 22 Caliber Single Shot, 24 Octagon Barrel, Blued Steel Frame, Stage Trigger, Peak Open Front and Rear Sights, Shoots C. B. Caps, 22 Short, 22 Long, 22 Long Rifle and 22 Stevens Pope Armory Cartridges, weight 2¾ pounds . . . . . each 3.00

STEVENS LITTLE SCOUT, No. 14 RIFLES

Fig 8894B

Price, 18inch Round Barrel Stage Trigger, German Silver Knife-edge Front and Open Rear Sight Shoots C. B. Caps, 22 Short, 22 Long, 22 Long Rifle and 22 Stevens Pope Armory Cartridges . . . . each 2 25

DAISY 500 SHOT AIR RIFLES

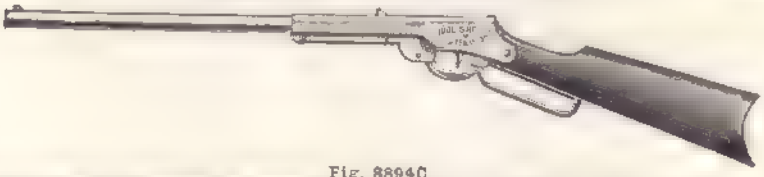


Fig. 8894C

Price, Daisy Repeater, No. 30, 500 Shots, Lever Action, Nickel Plated Barrel and Frame, Walnut Stock, 32 inches long over all. Shoots BB Shot. Weight 2 pounds 10 ounces . . . . . per dozen 22 00

Daisy Single Shot No. 27, Nickel Plated Barrel and Frame, Walnut Stock. Entire Length 34 inches . . . . . " 12 00

IMPROVED FINISH DROP SHOT

Number	BB	2	3	4	5	6	7
Pellets to an ounce	53	95	115	150	175	250	315
Price . . . . . per 25-pound Bag							

BUCK SHOT

Number	3	4	5	6	7	8
Pellets to the pound	115	130	140	160	200	250
Price . . . . . per 25-pound Bag						

AIR RIFLE SHOT

Price, Improved Round B. B. Shot, per 5-pound Bags . . . . . per 100

BAR LEAD

Price, Bar Lead in 25-pound Boxes . . . . . per pound

Here It Is

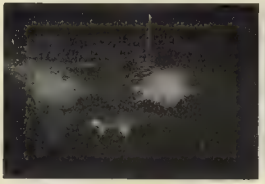
The Automatic Steering Gear

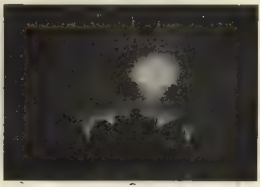
For Automobile Headlights

AUTOMATICALLY projects the light AROUND THE CORNER and KEEPS IT ALWAYS ON THE ROAD, regardless of its crooks and turns.

MAKES NIGHT DRIVING SAFE AND PLEASANT

REDUCES DANGER OF ACCIDENTS **INCREASES SPEED AT NIGHT**





Reproduced from *photographs taken at night* from tonneau of automobile.
Picture No. 1 shows car equipped with "Automatic" Gear turning left into road with ditches on both sides and shows the road clearly the moment the car starts to make the turn, avoiding all danger of accident.
Picture No. 2 taken with car in exactly the same position but with lamps projecting their light straight ahead of the body, as in the old way. See the road to the left if you can.

COULD YOU ASK FOR MORE CONVINCING PROOF?

Every Automobile owner and driver **KNOWS** the need of an **"AUTOMATIC" GEAR** that will project the light along the road in advance of the **WHEELS** at all times.

PRICE, $15.00, COMPLETE

Built in the best manner possible, of malleable iron and steel
All parts subject to wear are hardened. Polished brass finish. Positively noiseless. Easily attached to any car. Guaranteed for one year.
Write for descriptive circular and measurement blank.

AGENTS AND DEALERS: Write today for the best selling proposition that has ever been offered on Automobile Equipment.

MANUFACTURERS: Equip your 1911 Models—it will help sell them.

OWNERS: YOU NEED IT. ORDER TODAY through your Sundry Dealer, Repair Man, Garage or direct from the Manufacturer.

Scranton Automobile Equipment Company

205 Coleman Bldg. 1438 South Penn Square Philadelphia, Penna.

Seth Thomas Clock Co.'s Rich Gold Plated Clocks

Guaranteed Accurate Timekeepers. Prices Each

EMPIRE No. 1

Polished metal case. Rich gold plated case, lacquered. Beveled plate glass front and sides Cream porcelain dial 8-day, half hour strike. 4 inch dial. Height 11 inches, base 6¾ inches.

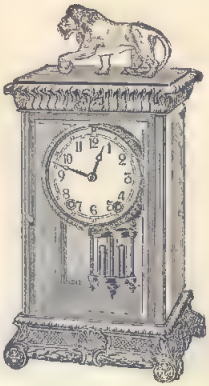
No. 6008 Each $40 00

Clocks illustrated on this page are highly appreciated as wedding gifts.

EMPIRE No 11

Polished metal case. Rich gold plated case and lacquered Beveled plate glass front and sides. Cream porcelain dial. 8-day, half-hour strike, 4-inch dial Height 14 inches, base 8 inches.

No 6009 Each $42.00



EMPIRE No. 13

Top, base and lion made in rich gold, bronze or verde antique. Body polished gold Height clock only, 11¾ inches. Height of clock and lion 15¼ inches.

No. 6010 Clock only .. $40 00
No. 6011 Clock with lion. 43.35

LA FLEUR

Rich gold finish. Height 14 inches, base 7¾ inches. 8-day, fine polished movement, half-hour strike, cathedral bell, 4¼-inch dial

No. 6012 Each . $31.60

Special Syrian finish.

No. 6013 Each 25.35

VISTA

Rich gold finish, with gold panel Height 12¾ inches, base 8 inches. 8-day, fine polished movement, half-hour strike, cathedral bell, 4¼-inch dial.

No. 6014 Each $30 30

Special Syrian finish.

No. 6015 Each 26 35

LA NORMA

Rich gold finish. Height 12 inches, base 7 inches. 8-day, fine polished movement, half-hour strike, cathedral bell, 4¼-inch dial.

No 6016 Each $30 30

Special Syrian finish

No. 6017 Each 24.70

Waterbury Clock Co.'s Fine Rich Gold Plated Clocks

Guaranteed Accurate Timekeepers

Prices Each

All Orders Filled Same Day Received

WANDERER

Rich gold plated or gun metal finish with gold plated handle and matting. 2-inch porcelain dial. Beveled glass at front and sides. Height 4⅝ inches

No. 6018 1-day, time, alarm. Each . . $8 55
No. 6019 1 day, half-hour strike, repeater. Each . . . 9 35

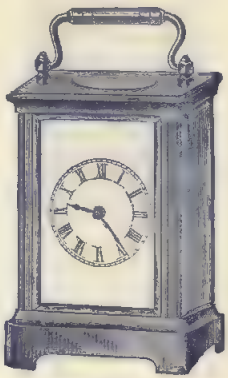
A trial order will convince you all our goods are guaranteed as represented.

Let us hear from you

CZAR

Rich gold plated. 8-day, half hour strike, gong, repeater, jeweled movement. 2-incl. porcelain dial. Beveled glass at front, sides and top. Height 5¾ inches.

No. 6020 Each . . 20.00



SAGE

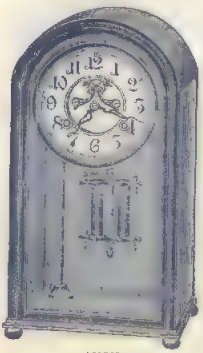
Rich gold plated 2-inch porcelain dial Beveled glass at front, sides and top. Height 5⅝ inches.

No. 6021 8-day, time. Each.....$ 9 35
No. 6022 8-day, half-hour strike, repeater, jeweled movement. Each.. 16.70
No. 6023 8-day, half-hour strike, gong, repeater, jeweled movement Each 17 35
No. 6024 8-day, half-hour strike, repeater, alarm, jeweled movement. Each 18 70

BREST

Polished brass or rich gold plated. 8-day, half-hour strike, gong. 3½-inch ivory dial. Ivory center. Visible escapement. Cast gilt bezel. Beveled glass front, sides and back. Height 9¼ inches, width 5⅝ inches.

No. 6025 Polished brass. Each . .$32 00
No. 6026 Rich gold plated. Each 34.70



AUCH

Rich gold plated. 8-day. half hour strike, gong 4½-inch ivory dial. Ivory center. Visible escapement. Cast gilt bezel. Beveled glass front, sides and back. Height 10⅝ inches, width 5⅜ inches.

No. 6027 Each $45 35

DIEPPE

Rich gold plated. 8-day. half-hour strike, gong, 4⅜ inch ivory dial. Ivory center Visible escapement. Cast gilt bezel. Beveled glass front, sides and back Height 10⅞ inches, width 7⅝ inches.

No. 6028 Each $40.00

NEW HAVEN CLOCK CO.'S FINE OFFICE CLOCKS AND REGULATORS

GUARANTEED ACCURATE TIMEKEEPERS. PRICES EACH.

10 INCH BRANFORD

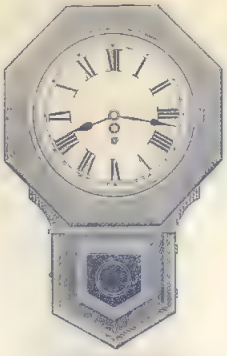
Solid oak. Height, 22¾ inches; width, 15 inches. Dial 10 inches.

No. 5910	Eight-day time	each, $ 8.15
No. 5911	Eight-day strike	each, 8.50
No. 5912	Eight-day time, calendar	each, 8.75
No. 5913	Eight-day strike, calendar	each, 10.10

12 INCH BRANFORD

Solid oak. Height, 27½ inches; width, 17⅜ inches. Dia. 12 inches.

No. 5914	Eight-day time	each $ 8.55
No. 5915	Eight-day strike	each, 9.00
No. 5916	Eight-day time, calendar	each, 9.15
No. 5917	Eight-day strike, calendar	each, 10.50



8 INCH DROP OCTAGON

Solid oak. Height, 18⅛ inches; width, 12⅜ inches. Dia. 8 inches.

No. 5918	Eight-day time	each, $ 7.40
No. 5919	Eight-day strike	each, 8.10
No. 5920	Eight-day time, calendar	each, 8.40
No. 5921	Eight-day strike, calendar	each, 9.80

10-INCH DROP OCTAGON

Solid oak. Height, 21⅝ inches; width, 14⅜ inches. Dial 10 inches.

No. 5922	Eight-day time	each, $ 7.50
No. 5923	Eight-day strike	each, 8.10
No. 5924	Eight-day time, calendar	each, 8.40
No. 5925	Eight-day strike, calendar	each, 9.80

12 INCH DROP OCTAGON

(Showing Eight-day calendar dating.)

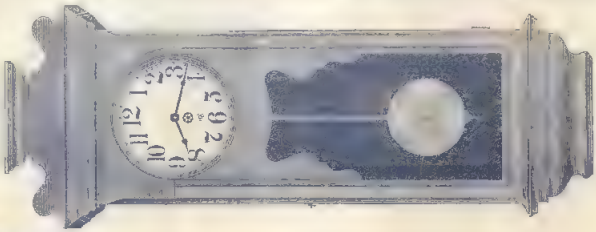
Rosewood or mahog. veneer. Height, 34¼ inches, width 15⅛ inches. Dial 12 inches.

No. 5926	Eight-day time	each, $ 9.35
No. 5927	Eight-day strike	each, 10.70
No. 5928	Eight-day time, calendar	each, 9.95
No. 5929	Eight-day strike, calendar	each, 11.30

12 INCH DROP OCTAGON

Solid oak. Height, 33¾ inches, width, 16½ inches. Dial 12 inches.

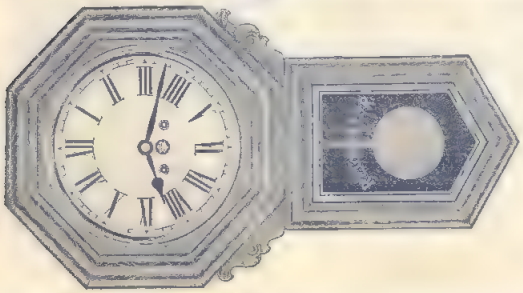
No. 5930	Eight-day time	each, $ 8.75
No. 5931	Eight-day strike	each, 10.10
No. 5932	Eight-day time, calendar	each, 9.25
No. 5933	Eight-day strike, calendar	each, 11.70



SOLENT

Solid oak, antique finish. Height, 30¾ inches; width, 15⅜ inches. Dial 6 inches.

No. 5934	Eight-day time	each, $ 18.35
No. 5935	Eight-day time, calendar	each 19.95
No. 5936	Eight-day time, gong	each, 20.95
No. 5937	Eight-day time, gong, calendar	each, 22.95



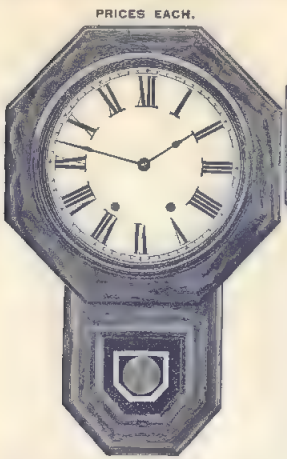
EXIE

Solid oak, antique finish. Height, 33½ inches, width 18⅜ inches. Dial 12 inches.

No. 5938	Eight-day time	each, $ 9.70
No. 5939	Eight-day time, calendar	each, 10.30
No. 5940	Eight day time, gong	each, 11.70
No. 5941	Eight day time, gong, calendar	each, 12.30

Seth Thomas Clock Co.'s Fine Office Regulators.

PRICES EACH.



12-INCH DROP OCTAGON.

Mahogany veneer or old oak, polished; height 23¼ inches.

No. 5896	Eight-day, spring, time.	Each	$10 80
No. 5897	" " " strike	Each	12 96

10-INCH DROP OCTAGON

Mahogany veneer polished with gilt lines or old oak without gilt lines, height 21½ inches.

No. 5898	Eight-day, spring, time.	Each	$10 35
No. 5899	" " " strike	Each	12 40

8-INCH DROP OCTAGON

Mahogany finish or fumed oak; height 17 inches.

No. 5900	Eight-day, spring, time.	Each	$7 60
No. 5901	" " " strike.	Each	9 [illegible]

WORLD

Mahogany or old oak veneer, height 22 inches, 12-inch dial, [illegible] a large dust lens [illegible] movement, with tak[illegible] ed[illegible] straight Graham" dead be[illegible] escapement

No. 5902	Eleven-day, spring, time	Each	$18 70
No. 5903	Eight-day spring strike cathedral bell	Each	21 45

No. 6 OFFICE.

Old oak or mahogany, eight day spring, time only; height 26 inches, 12-inch dial.

No. 5904. Each $10 70

Surprisingly Accurate Regulators at Exceptionally Low Prices.

Guaranteed Accurate Timekeepers.

OFFICE No. 5.

Made in old oak only; height 23½ inches, width 19½ inches, 12-inch dial.

No. 5905	Eight-day, time	Each	$14 30
No. 5906	Eight-day strike	Each	17 00

CHATHAM.

Mahogany or golden oak; 12-inch dial diameter 16 inches.

No. 5907	Eight-day, pendulum, time.	Each	$ 9 75
No. 5908	Eight-day pendulum, strike	Each	11 90

Mahogany veneer, polished, height 23¾ inches, 12-inch dial

No. 5909 Eight-day, spring, strike. Each. $14 40

SLEIGH BELLS

BODY STRAPS

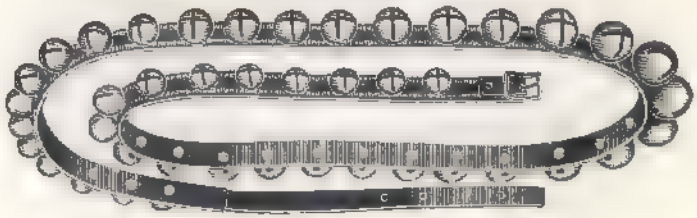


Fig 9834A

Price, No. 793, 24 Arctic Bells, Rolled Nickel Plated			per strap	2 20
" " 794, 30 " " " " "			"	2 50
" " 831, 30 " " " Brass Plated			"	2 70
" " 668, 36 " " " Silver White Finish on Brass			"	3 50
" " 189, 30 Globe Bells, Silver White Finish, Cast Bell Metal			"	4 10

SHAFT CHIMES

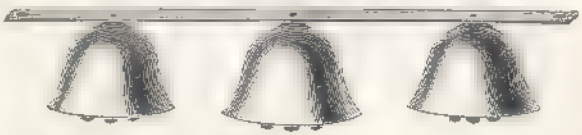


Fig. 9834B

Price, No. 1174	Dome Chimes, 3 Nickel Plated Bells	per pair	70
" " 865	Graduated Cup Chimes, 3 Nickel Plated Steel Bells	"	90
" " 621a	" " " 4 " " " " "	"	1 40
" " 624	" " " 4 " " Brass Bells	"	2 30
" " 378	Mikado Chimes, 4 Silver, Pure Metal Bells	"	2 70
" " 1190	Zephyr Chimes, 4 Nickel Plated Pure Bells	"	3 40

LOOSE TEAM BELLS

Price, No. 1, 3½ inch Loop Bell		per dozen	2 10
" " 3, 2⅞ " " "		"	1 50
" " 63, 2 " " Snap "		"	1 90

CAST POLISHED BRASS SWEDISH BELLS

Fig. 9834C

Price, No. 462, 2 Bells, 14 inch Cherry Leather Strap		per strap	2 70
" " 478, 4 " 18 " " "		"	3 30

SMITH-VAILE STRAIGHT LINE AIR COMPRESSORS

CLASS A

Bored-guide Crosshead Type. Size 12 x 12 x 12

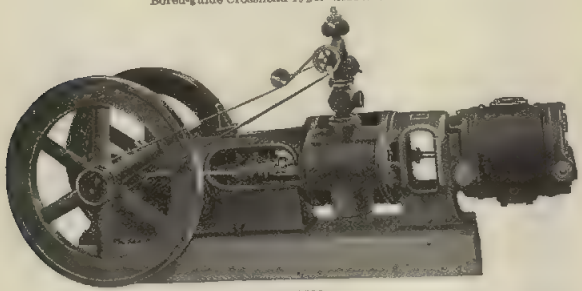


FIG. 1010

Suitable for installation where moderate capacity is desired. In foundries, quarries, carpet-cleaning plants, for elevating water from deep wells, refineries, etc.

Air cylinder is equipped with water jacket; air valves are of the automatic type located in the heads. They are of the disc type of a special alloy and are so made that both suction and discharge valves, together with their seats, can be removed together in a few moments. Connecting rods and piston rods are of steel, and all outside bronze bushings are provided for each pin-bearing. Crosshead is of the engine type working in bored ways. Fly wheels are of liberal proportions and weight. Main shaft-bearings are of liberal area and babbitted. Steam valves are of the balanced piston type, with a fixed cut-off.

Any size of these machines may be belt-driven by simply omitting the steam cylinder and substituting a belt-wheel for one of the fly-wheels. When a belt driven machine is used for intermittent service an unloading valve should be provided, as per price list below.

The cut above illustrates the 12-inch and 12-inch stroke machines. The 8-inch and 8-inch stroke machines are of the side-crank construction.

TABLE OF SIZES, CAPACITIES AND PRICES

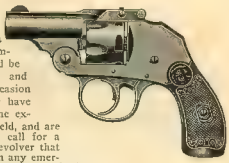
Size of Cylinders			Revolutions per Minute	Piston Speed Feet per Minute	Air Piston Sweep		Air Pressure, Lbs.	Pipe Sizes				List Price of Steam-Driven Compressor	List Price of Belt-Driven Compressor	Listing for Unloading Valve	Telegraphic Cipher
					Cubic Feet			Steam		Air					
Diameter		Length of Stroke			Per Revolution	Per Minute		Steam	Exhaust	Inlet, Inches	Outlet, Inches				
Steam	Air														
6	5	6	100 to 150	100 to 150	.19	19 to 28	100	1¼	1½	2	2	$300 00	$240 00	$0 00	Nab
6	6	6	100 " 150	100 " 150	34	34 " 51	100	1¼	1½	2½	2½	335 00	265 00	0 00	Nabat
6	8	6	100 " 150	100 " 150	34	34 " 51	60	1¼	2	2½	2½	425 00	350 00	0 00	Nabcote
8	8	8	100 " 150	133 " 200	46	45 " 69	100	1¼	2	3½	3	460 00	380 00	0 00	Nabca
8	10	8	100 " 150	133 " 200	72	73 " 108	70	1¼	2	3½	3	560 00	470 00	0 00	Nacarab
10	10	10	100 " 150	166 " 250	J	90 " 134	100	2	2½	3½	3	575 00	490 00	45 00	Nacarab
10	12	10	100 " 150	166 " 250	1 29	135 " 190	70	2	2½	4	3	600 00	550 00	60 00	Nacket
12	12	12	100 " 150	200 " 300	1 58	160 " 236	100	2	2½	4	3	800 00	625 00	60 00	Nadir
12	14	12	100 " 150	200 " 300	2 13	220 " 318	70	2½	3	4	3½	850 00	665 00	60 00	Nacrose
12	14	12	100 " 150	200 " 300	2 13	220 " 318	50	2½	3	5	4	900 00	725 00	90 00	Nacuous
12	16	12	100 " 150	200 " 300	2 78	278 " 415	50	3	3	6	4½	.....	.....	.....	Nacute
12	18	12	100 " 150	200 " 300	3 5	360 " 525	40	3	3	6	4½	.....	.....	.....	Nacute

The above prices are all F. O. B. cars factory and include combined Speed and Pressure Regulating Governor, Sight Feed Lubricators and Special Wrenches.

Special Base Plate and Lagged Steam Cylinders can be furnished at an additional cost.

Iver-Johnson Revolvers

These Revolvers were originally designed for cyclists, in response to a demand for a handy, compact weapon that could be conveniently carried and yet be effective if occasion required. But they have entirely outgrown the exclusiveness of this field, and are now supplying the call for a light, handy pocket revolver that can be relied upon in any emergency where the use of a safe and accurate-shooting weapon may be required.

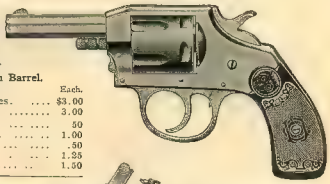


		Each
Iver Johnson Cycle.	Automatic. With Hammer. 32 Caliber. 2-inch Barrel. Weight, 12 ounces..	$6.00
" " " "	Hammerless. 32 " 2 " " 12 " ...	7 00

Iver Johnson 1900 Model.

Five Shot. Double Action. 2½-inch Barrel.

		Each.
32 Caliber. Nickel Plated.	Weight, 12 ounces.	$3.00
38 Caliber. " "	" 16 "	3.00
Extra for 4½-inch Barrel....		50
" " 6 " "		1.00
" " " Blue Finish....		.50
" " " Pearl Handle, 32 Calber..		1.25
" " " " 38 "		1.50



Iver Johnson Safety Hammer Automatic.

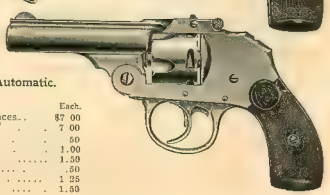
Five-Shot. Double Action. 3-inch Barrel.

		Each.
32 Caliber. Nickel Plated.	Wt., 12¼ ozs	$6 00
38 Caliber. " " "	17¼ "	6 00
Extra for 4-inch Barrel		50
" " 5 " " ..		1 00
" " 6 " " ..		1 50
" " Blue Finish ..		50
" " Pearl Handle, 32 Caliber . .		1 25
" " " " 38 " . .		1 50

Iver Johnson Safety Hammerless Automatic.

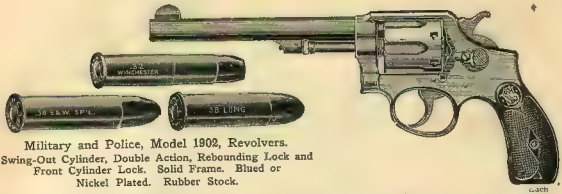
Five Shot. 3-inch Barrel.

		Each.
32 Caliber. Nickel Plated.	Weight, 12½ ounces..	$7 00
38 Caliber. " "	" 18 " . .	7 00
Extra for 4-inch Barrel..		50
" " 5 " "		1.00
" " 6 " "		1.50
" " Blue Finish		.50
" " Pearl Handle, 32 Caliber...		1 25
" " " " 38 "		1.50



SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

Smith & Wesson Revolvers



Military and Police, Model 1902, Revolvers.
Swing-Out Cylinder, Double Action, Rebounding Lock and Front Cylinder Lock. Solid Frame. Blued or Nickel Plated. Rubber Stock.

			Each
32 Caliber.	Six Shot.	4, 5 or 6½-inch Barrel. Takes 32 W C F Rifle Cartridges	$18 00
38 Caliber.	" "	4, 5 or 6½ " " " 38 S. & W. Special or 38 Long Colt Cartridges	18.00

Military and Police, Model 1905, Revolvers.
Square Checked Wood Stock.
Swing-Out Cylinder, Double Action, Rebounding Lock and Front Cylinder Lock. Solid Frame. Blued or Nickel Plated. Wood Stock.

			Each.
32 Caliber.	Six Shot.	4, 5 or 6½-inch Barrel Takes 32 W. C. F. Rifle Cartridges	$19.00
38 Caliber.	" "	4, 5 or 6½ " 38 S. & W. Special or 38 Long Colt Cartridges	19.00

Remington Derringers

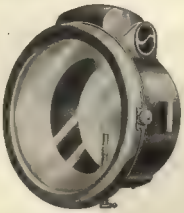
Can be furnished full blued or nickel plated. Unless specified, blued will always be sent. Regularly furnished with rubber stock, but can be furnished with pearl stock, at $1.75 extra, or with Ivory stock, at $3 00 extra.

	Each.
Remington Double Derringer. Two Shot. Weight, 11 ounces. Takes Regular 41 Short R. F. Cartridges	$6.25

Extras for Smith & Wesson Revolvers.

	Each.
Pearl Stock for 32 Caliber Double Action and 22 Hand Ejector Revolvers	$2 50
" " " 32 and 38 Caliber Safety Hammerless, 38 Dbl. Action and 32 Hand Ejector Revolvers	2 75
" " " 38 and 44 Dbl. Action W. C. F and 32 and 38 Military and Police Revolvers	3 50
Ivory Stock for Any Style Revolvers	3.50

For Nickel Plating or Bluing Revolvers, from $1.50 to $2 00 each.
Mailing and Registration of Revolvers: 22 H. E., 30 cts; 32 H. E., 35 cts; 32 Rev., 28 cts; 38 Rev., 33 cts; 38 M. & P., 50 cts; 44 Rev., 57 cts.
Engraving Revolvers from $5.00 up, according to quality and quantity.



Lamp Worries Vanish When Solars Are Used

They represent the maximum of light, the maximum of service, the maximum of beauty, and the minimum of trouble.

And the man who rides behind them has a feeling of confidence that no other lamp equipment brings. For he knows that his Solar can always be depended on to show the way clear and bright.

The maker of your car will furnish

Solar Lamps

if you insist. Most of the high-grade American cars are regularly equipped with them, anyway.

Don't take ordinary lamps just to save the manufacturer a little money. Insist on his giving you the same lamps he uses on the car he drives himself.

BADGER BRASS MFG. COMPANY

Kenosha, Wis. **New York City**

CLAW BARS

No. 16

WITHOUT HEEL

FIG 2425

Solid cast steel. Total length 5 feet. Weight 29 lbs.

List price.....per lb., $0.22

DOUBLE END CLAW BAR

No. 18

FIG 2426.

One end for drawing Boat Spikes, other end for Railroad Spikes.

List price.....per lb., $0.22

MINE SPIKE BARS

No. 28

FIG 2427

No. 30

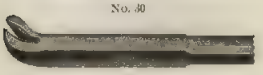


FIG 2428.

Solid cast steel. For drawing Spikes. Diameter ⅝ inch and smaller. Lengths 24 to 42 inches.

List price.....per lb., $0.22

MINE SPIKE BAR

No. 378

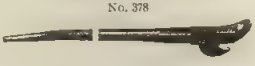


FIG. 2429.

This Mine Spike Bar, on which patent has been applied for, has too many advantages over the old style spike pullers to be enumerated here. Every bar absolutely guaranteed. Length 31 inches.

List price.....per lb., $0.22

CARPENTERS' PINCH (OR WRECKING) BARS

No. 1.

FIG. 2415.

No. 2.

FIG. 2416.

Forged from best open hearth steel, oil finished, with wedge or chisel point at upper end; Length over all, 30-in.; Upper end ¾ in. round; Lower end, ⅝-in. square.

No. 1—With split pinch point or claw at lower end: Extra finished and tempered: Weight each, about 5¼ lbs.

List Price..... each, $3.00

No. 2—Standard, with plain pinch point at lower end, Weight each, about 5¼ lbs.

List Price..... each, $2.00

CARPENTERS' WRECKING BARS

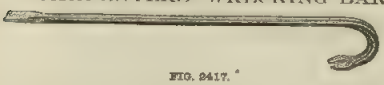


FIG. 2417.

Forged from Octagon Tool Steel, ¾ in diam., 36 in shed hardened at both ends; wedge or chisel point at upper end; goose neck and claw at lower end. 30 in. long; wt., each about 4½ lbs.

List Price each, $2.00

24 in. long; wt., each about 3⅝ lbs.

List Price...each, $1.80

CROW BARS

Wedge Point.

FIG. 2418.

Pinch Point.

FIG. 2419.

Weight Each, Lbs.	Length, Feet	List Price Per lb., Either Style
10	4	$0.12
12	4½	.12
14	4 ft., 10 in.	.12
16	5	.12
18	5½	.12
20	5½	.12
22	5⅝	.12
25	5¾	.12
30	6¼	.12

LINING BARS

FIG. 2420.

Diamond Point, Forged Steel, Tempered.

Wt., Each.....lbs	18	20
Length, about, feet.	5	5
List Price .. per lb.	$0.12	.12

TAMPING BARS

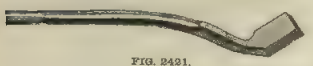


FIG. 2421.

With flattened rectangular Tamper.

Weight each, 14 lbs. length about 6 feet.

List Price..... per lb. $0.16

CLAW BARS

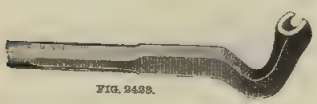


FIG. 2433.

GOOSE NECK PATTERN

Forged Steel, oiled finish, round body with squared lower end with tempered claw.

Length about 5 ft., wt. each, about 29 lbs.

List Price.....per lb., $0.22

FIG. 2434.

VERONA PATTERN

With heel, length about 5 ft., wt. each, about 29 lbs.

List Price.....per lb., $0.22

Another Big Triumph for the STAVER-CHICAGO

First in the Engine-Efficiency Contest at Algonquin

The official figures of the result of the Algonquin hill-climbing contest held September 16th, show the Staver-Chicago far in the lead of a field of cars ranging in price up to $3,000.

And the victory was won, too, under a handicap which makes it all the more remarkable.

The test was conducted under the Chicago Motor Club formula, which provides for the consideration of time, cylinder displacement of motor and weight of car with driver.

At the last minute we had to change drivers, and the judges ruled that the weight of our driver could not be considered. The percentage of all the other cars, however, were figured with the weight of the driver in. These cars ranged up to $3,000 in price. Here are the official figures:—

No. of Car	Name	Bore and Stroke	Cylinders	Percentage	Weight of Car Only
No. 10	Staver-Chicago	4 x 4	4 Cylinders	7.41	2,640
No. 15	Marion	4½ x 4½	4 "	9.00	2,590
No. 11	Velie	4¼ x 5½	4 "	8.22	2,800
No. 7	Ferry	4½ x 4½	4 "	8.39	2,140
No. 1	Brush	4 x 5	4 "	8.51	1,210
No. 3	Cartercar	4 x 4	4 "	8.59	2,015
No. 17	National	5 x 5½	4 "	8.78	3,145
No. 16	Kissel	4½ x 4½	4 "	8.85	3,135
No. 12	Jackson	4½ x 4½	4 "	8.87	2,607
No. 2	Oakland	4 x 4	4 "	8.91	2,015
No. 8	Maline	4 x 6	4 "	9.03	2,645
No. 4	Cartercar	4 x 4	4 "	9.33	2,030
No. 14	Interstate	4½ x 5	4 "	9.59	2,670

A grueling test like this shatters claims and theories, and makes facts stand out.

76TH AND WALLACE STS. **STAVER CARRIAGE CO.,** CHICAGO, ILL.

DEPARTMENT 9048

Full line of models—Torpedo, Touring, Baby Tonneau, Coupe, Roadster and Torpedo Roadster. 30, 35 and 40 H. P. . . . . $1,450 to $2,000

Dealers: A little choice territory still remains open on the Staver-Chicago—a winning car with an advertising plan back of it that you'll appreciate. Write us quick for particulars.

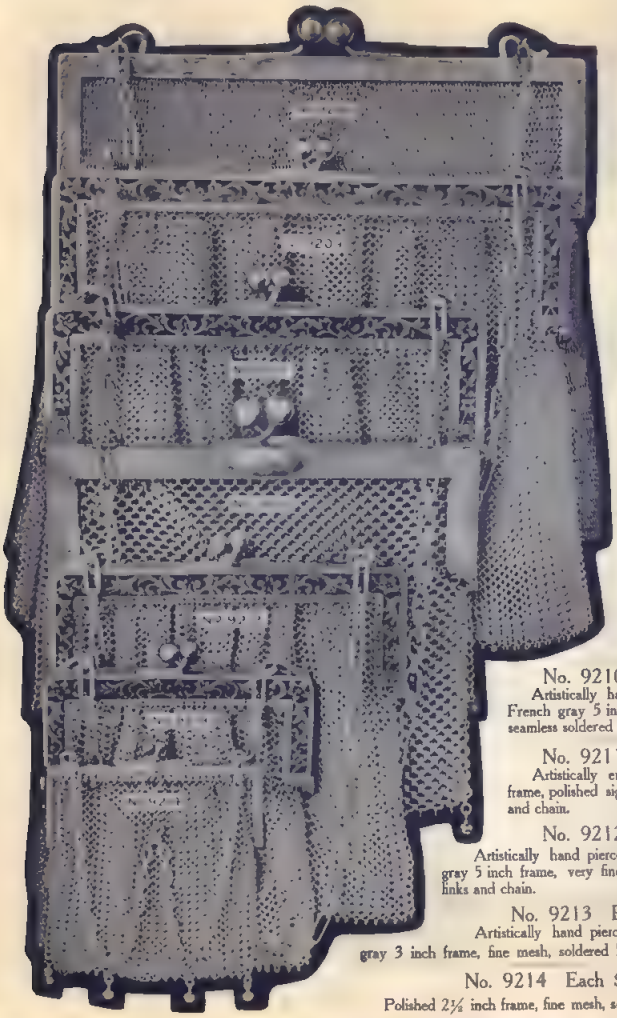
STAVER-CHICAGO

STAVER-CHICAGO

STAVER-CHICAGO

FINE STERLING SILVER MESH BAGS

GUARANTEED $\frac{925}{1000}$ FINE. Illustrations are Exact Size.



Our hand pierced and engraved patterns, latest styles, fine and extension mesh, are especially commended as quick sellers.

Artistically made, very fine mesh, every link soldered, without seams, and very rich and exquisite in appearance. . . . .

Our prices are surprisingly low when you take into consideration that the numbers quoted and illustrated are of the highest quality and finest grade obtainable.

No. 9208 Each $114.25

Beautifully hand engraved, polished finish 6¼ inch frame, the finest mesh obtainable, seamless soldered links and chain.

No. 9209 Each $101.50

Artistically hand pierced and engraved, French gray 6 inch frame, the finest mesh obtainable, seamless soldered links and chain.

No. 9210 Each $74.75

Artistically hand pierced and engraved, French gray 5 inch frame, very fine mesh, seamless soldered links and chain.

No. 9211 Each $44.00

Artistically engine turned design, 5 inch frame, polished signet center, soldered mesh and chain.

No. 9212 Each $48.00

Artistically hand pierced and engraved, French gray 5 inch frame, very fine mesh, s amless soldered links and chain.

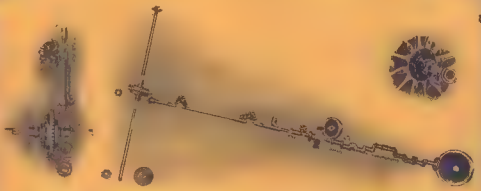
No. 9213 Each $32.00

Artistically hand pierced and engraved, French gray 3 inch frame, fine mesh, soldered links and chain.

No. 9214 Each $13.50

Polished 2½ inch frame, fine mesh, soldered links and chain.

Stevens-Duryea



Square and Taper Squares connecting the units in power line

The Drive Without a Weak Link

¶ The elimination of keys and pins at points where power is transmitted has been one of the strongest features of Stevens-Duryea construction since 1908. It was original with our engineering staff and time most impressively testifies to its value. Let our distributors tell you fully of its merit and just why we continue to feature it.

WRITE FOR OUR LITERATURE MAILED ON REQUEST

Learn for yourself just why the Stevens-Duryea is entitled to your unquestioned preference.

See what we have to offer before you buy any car

Model Y Price $4000.00. In standard finish and equipment

STEVENS-DURYEA COMPANY
CHICOPEE FALLS-MASS
LICENSED UNDER SELDEN PATENT

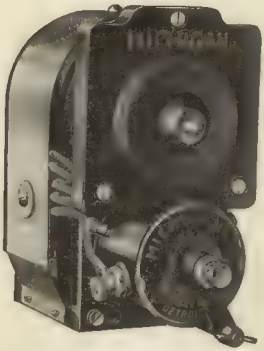
Limousine Luxury

is epitomized in every detail of construction in Stevens-Duryea Closed Cars. From the 18th century mode of conveyance to the 1911 Stevens-Duryea Limousine is a far cry—all the intervening years progressed toward that perfect result.

OUR LITERATURE
is convincing, informative—tells "How and Why." Mailed on request

STEVENS-DURYEA COMPANY, CHICOPEE FALLS, MASSACHUSETTS
Licensed Under Selden Patent

Michigan



There Is No Guesswork

In design or workmanship of this magneto. Everything is micrometered, tested, inspected with **eternal vigilance.**

WE ABSOLUTELY KNOW IT IS RIGHT

22% Iridium in our Platinum Points.
Self-oiling steel breaker arm.
Other good points told of in our catalog.

MICHIGAN MAGNETO COMPANY, DETROIT, MICHIGAN

STEWART PRECISION CARBURETOR

"AN INSTRUMENT OF UNFAILING CONSISTENCY"

PERFECT PRECISION, perfectly uniform performance at all times, maximum development of engine power, all are demands of the automobile carburetor.

You get them in the Stewart Precision Carburetor as in no other.

No carburetor regulated by springs can be depended upon for a perfectly consistent performance. It is bound to be an "In and Outer."

In the Stewart Precision Carburetor the proportioning of air and gasoline is regulated by gravity. It has only one moving part—the air valve. It is practically indestructible. Once adjusted, *it stays adjusted. The Stewart never fails to develop greater speed than any competing carburetor.*

The ordinary carburetor hampers the engine performance. The Stewart Precision Carburetor develops the maximum engine power and maintains it consistently whenever it is called upon.

Mr. Automobile Manufacturer, Mr. Automobile User, is this worth anything to you ?

Better investigate the Stewart. Send for Booklet "C."

MANUFACTURED BY
ALFRED C. STEWART MACHINE WORKS
1008 Santee Street, Los Angeles.

New York Branch, FILLMORE CONDIT Mgr. 17 Battery Place.

The Studebaker "40"

IN the purchase of an automobile, there are no other factors so trustworthy, so affording assurance against disappointment, as the STUDEBAKER experience of over half a century in vehicle building, the STUDEBAKER resources for employing the best of both brains and materials, the STUDEBAKER stability and integrity upholding the highest reputation in the world.

Let us send you our catalogue. You will also receive "Leaves From a Motorist Log Book" a charming story of motor travel abroad.

STUDEBAKER AUTOMOBILE CO., South Bend, Ind.

Branches Everywhere

THE SARGENT AUTOMATIC GAS CALORIMETER

FOR DETERMINING THE CALORIFIC VALUE OF DUST, TAR, AND MOISTURE IN ALL KINDS OF INFLAMMABLE GASES

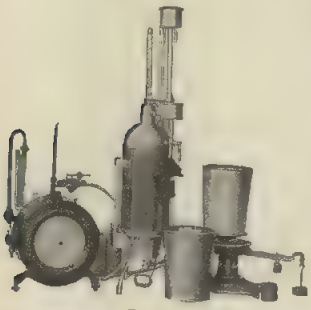


FIG. 819.

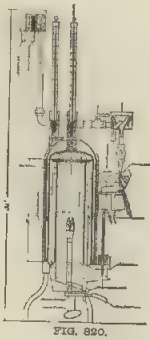


FIG. 820.

The Sargent Gas Calorimeter was designed to enable the operator to determine the calorific value as well as the foreign matter in gases, quickly, simply and accurately.

Cut above shows a section of a calorimeter in which the inlet water having a constant head at the cistern E, the temperature of which is taken at C, envelopes the whole instrument and passes through in the direction of the arrows and the rise in temperature is taken by the thermometer at D before any heat is lost by radiation to the air. The combustion of gas takes place in the central flue and the products of combustion pass to the top and down the annular chambers in the direction of the arrows reaching the temperature of the water before passing out at B, where a damper regulates the velocity and the thermometer gives the temperature of the exhaust products.

The calorimeter complete as usually furnished, consists of a wet test gas meter with thermometer and manometer, a pressure regulator with micrometer adjustment, the calorimeter proper with three thermometers, automatic dumping bucket, hose, batteries, Bunsen burner, beaker, etc.

When testing blast furnace and producer gases, apparatus used to determine the dust, tar and moisture in these gases can be furnished with the calorimeter. The dust is determined by allowing a certain number of cubic feet of gas to pass through a filter paper, which having been weighed before and after the test, indicates the dust per cubic foot. The moisture is determined by passing cool gas through calcium chloride which is weighed before and after.

Write for catalogue and paper on the "Testing of Inflammable Gases."

PRICES ON FOLLOWING PAGE

SURVEYING AND MINING ANEROIDS

T-1165

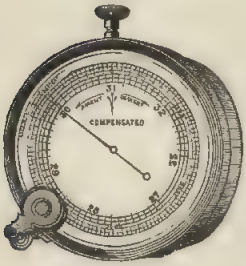


FIG 818

The Surveying and Mining Aneroid has been designed and constructed specially for the use of Surveyors and Engineers, for the purpose of readily ascertaining slight variations in gradients, levels, etc., and from its extreme sensitiveness will be found of considerable utility in Mining and Surveying work generally.

Besides extreme sensitiveness, the specialty claimed for this Instrument is an arrangement of the scale of altitudes which admits of subdivision by a vernier, hitherto impracticable, owing to the altitude scale in ordinary use being a gradually diminishing one, to which a vernier cannot be applied. In the present instrument the action has been so adjusted as to give accurate readings upon a regular scale of altitudes, the Barometrical Scale of inches having been made progressive so as to afford the correct relative readings with the scale of altitudes.

For Mining purposes the entire circle of the dial is graduated to represent 6 inches of the mercurial column, i. e., from 27 inches to 33. This scale will register about 2,000 feet below sea level to 4,000 feet above, the finest divisions, hundredths of the altitude scale, represent 10 feet measurements, which can be again subdivided by the vernier scale to single feet. The vernier scale is moved by a rack-work adjustment, and a magnifying lens which rotates on the outer circumference of the instrument facilitates the reading of minute quantities.

For Surface Surveying purposes, where it is not required to be used below sea-level, the instrument is made with the scale divided from 25 to 31 inches, thus giving an altitude scale of 5,000 feet above sea-level only, and with this open scale and the assistance of the vernier, the same minute readings can be easily taken.

T-1165. Surveying Aneroid, 5-inch diameter, compensated for temperature, silvered metal dial, graduated to hundredths, and reading by vernier to single feet, with magnifier, in leather sling case, with altitude scale to 5,000 feet..... $50.00

T-1166. Surveying Aneroid, 5-inch diameter, compensated for temperature, silvered metal dial, graduated to hundredths, and reading by vernier to single feet, with magnifier, in leather sling case, with altitude scale to 10,000 feet, reads by vernier to 2 feet..... 60.00

T-1167. Surveying Aneroid, 5-inch diameter, compensated for temperature, silvered metal dial, graduated to hundredths, and reading by vernier to single feet, with magnifier, in leather sling case, with altitude scale to 15,000 feet, reads by vernier to 5 feet..... 70.00

T-1168. Mining Aneroid, same as T-1165, but arranged to register 2,000 feet below sea level to 4,000 above..... 50.00

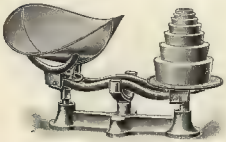
TEA AND COUNTER SCALES

NO. 160 AND 161

NO. 171

No. **160** Capacity ½ oz. to 2 lbs., Japanned, with Weights and Tin Scoop ..... Per dozen $12.50
" **161** " ½ " " 4 " " " " " " " " " " 14.00
" **171** " ½ " " 8 " " " " " " " " " " 42.00

No. 160 and 161, quarter dozen in a Case; No. 171, one-twelfth dozen.



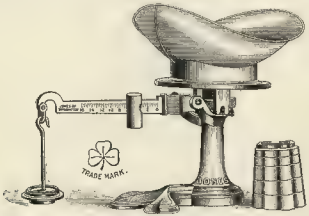
NO. 0 AND 1

NO. 2 AND 3

Even Balance, with Heavy Tin Scoop, Bearings Protected by Caps.

No. **0** Capacity, ¼ oz. to 2 lbs., Japanned Scale, Plain Weights, Chilled Iron Bearings ..... Per dozen $14.75
" **1** " ¼ " " 4 " " " " " " " " " " 15.50
" **2** " ¼ " " 4 " " " Japanned " Semi-Steel " ..... " " 30.00
" **3** " ¼ " " 8 " " " " " " " " " " 51.00

No. 0, 1 and 2, quarter dozen in a Case; No. 3, one-twelfth dozen.



"CLOVER LEAF"

Polished Brass Beam and Poise, Heavy Tin Scoop.
Absolutely Accurate Scale and Weights, Finished in Green Enamel.

"Clover Leaf," Capacity ¼ oz. to 25 lbs. ..... Each $4.50

One in a Case.

COMPARATIVE LIST OF SPRING BALANCES

Chatillon	No. 2000	20	30	21	10	020	40	50	70	41	80	90	100	100A	150
Landers, Frary & Clark	" 3	50	51	52	70	273	81	82	84	91	86	57	88	88A	302
Chatillon	No. 231	241	232	242	252	144E	250	0260	261	271	0261	262	272
Landers, Frary & Clark	" 76	77	76½	77½	1195	475E	119	0120W	123	124	01133	126	127
Chatillon	No. 0262	0272	264	275	0284	0274	0265	0275	0268	5266EH	5266E	4266E
Landers, Frary & Clark	" 0126	0127	150	141	0150	0151	0140	0141	0143	430	0030E7	0030E

NO. 502 AND 1502

COLUMBIA FAMILY SCALES

NO. 102, 104½ AND 1100

SHEET STEEL, BLACK ENAMEL FINISH, DECORATED IN GILT

Regulated by Brass Screw on Top.

No.													Each.
502	Slanting Dial, Weighs 24 pounds x 1 ounce, White Enameled Dial, Square Steel Top, without Scoop												$1.20
1502	"	"	"	24	"	x 1	"	"	"	"	"	"	with Tin	"	1.40
102	Straight	"	"	24	"	x 1	"	"	"	"	"	"	without	"	1.30
104½	"	"	"	24	"	x 1	"	"	"	"	White Enam.	"	"	"	1.50
1100	"	"	"	24	"	x 1	"	"	"	"	Round Steel	"	with Tin	"	1.50

One in a Box. Six in a Case.

NO. 162 AND 1162

NO. 162 AND 1162

SHEET STEEL, BLACK ENAMEL FINISH

Decorated in Gilt.

Regulated by Brass Screw on Top.

Large 8 inch Dial, with Clear Plain Figures.

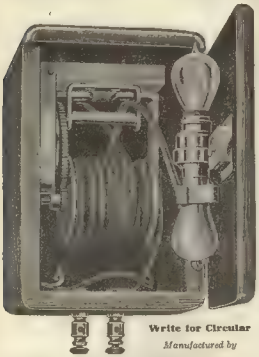
Square Steel Top.

No.		Each.
162	Weighs 60 pounds x 2 ounces, without Scoop	$2.75
1162	" 60 " x 2 " with Tin	3.25

One in a Box. Six in a Case.

CHRISTMAN DASH LAMP

For Trouble Hunting at Night

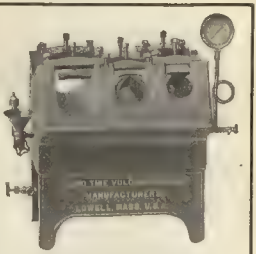


Write for Circular

Manufactured by

PENN AUTO SUPPLY CO.

Philadelphia, Pa., U. S. A.



[As a Progressive Business Man you should by all means use, handle or recommend our

NEW IMPROVED AUTO-TIRE

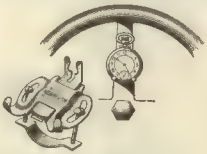
VULCANIZING MACHINE

simply and solely because it is the best there is in Vulcanizers at any price and because the price isn't much, the operation is easy and profits are exceptionally large.

Our machine is different, far better and more economical in operation and investment cost than any other made. In all features it is so superior to all other devices there is hardly a comparison. We have some facts that will interest you and that will put you in the way of big profits. In your own interest, get posted—Write to us to-day.

Auto-Tire Vulcanizing Co., Lowell, Mass.

BETTER THAN A CLOCK



Patent applied for

Places the time where you can see it.
Will adjust to any watch.
Watch can be inserted or removed instantly.
Nicely finished and Nickle Plated, price, $1.00.
If your dealer cannot supply you we will send postpaid on receipt of price.

H. L. LANG

STAUNTON, Va.

THE AMERICAN

"A Car for the discriminating few"

The Traveler—50 H. P., 40-inch Wheels

$4000

Those features of the American which seemed most radical—its underslung frame and large wheels—have splendidly proved their desirability and have established new standards of safety and efficiency.

Because of its low center of gravity the American takes turns with perfect safety at high speeds; skidding and sideslip dangers are eliminated.

Its large wheels give increased life to the tires; greater comfort, pleasanter riding.

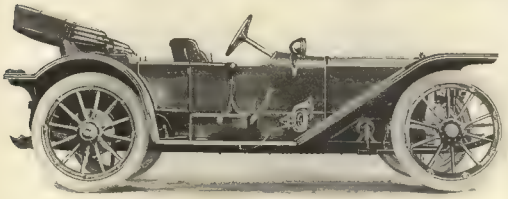
American Motor Car Co.

Dept. U. INDIANAPOLIS, IND.

Licensed under Selden Patent

THE AMERICAN

A Car for the Discriminating Few



The Traveler—Underslung Frame, 40-inch Wheels, 4 Cylinders, 50 H. P.—$4,250

Here's OPPORTUNITY for the RIGHT MAN

¶ With the increased 1911 output we shall widen the American field.

¶ That announcement is of the utmost importance to dealers everywhere who are in a position to handle American cars.

¶ The country's largest cities have heretofore taken practically every car we have built, and their 1911 allotments must be very large.

¶ In addition to these communities which have absorbed the American output, season after season, we shall select other cities as American centers, provided we have found men of the right caliber for those new agencies.

¶ The American makes an instantaneous appeal to men of discriminating judgment everywhere. Its special features, far from being freakish, have proved it the safest and most comfortable car in the world.

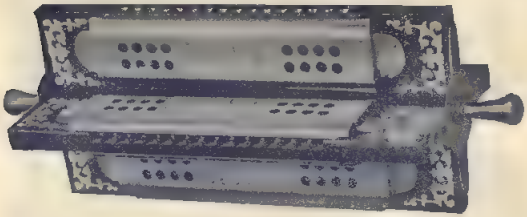
¶ Its underslung frame, high wheels and great power applied in an absolutely direct line, obviate not only side and rear lash, but give complete immunity under conditions which would overturn other cars instantly.

The dealer who reads this announcement is blind to his own best interests if he does not endeavor to secure an American agency

American Motor Car Company, *Dept. U.,* **Indianapolis, Ind.**

Licensed Under Selden Patent

Highest Grade Harmonicas and Jews Harps



FOUR-IN-ONE TREMOLO CONCERT.

16 Double Holes on each Side 128 Reeds, Brass Plates, Nickel Covers, in Four Keys. Length 5½ inches.

No. 9532.....Each $3.15

16 Double Holes on each Side, 64 Reeds, Nickel Covers, Tremolo Tuning.

No. 9528.....Each $1.00

No. 9529

16 Double Holes on each Side, 64 Reeds, Brass Plates, Nickel Covers, Tremolo Tuning, Length 7⅛ inches.

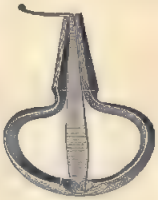
No. 9529.....Each $1.20

20 Double Holes on each Side, 80 Reeds, Brass Plates, Nickel Covers, Tremolo Tuning, Length 8¾ inches.

No. 9530.....Each $1.50

Same as No. 9530, but 24 Double Holes on each Side, 96 Reeds. Length 9¼ inches.

No. 9531.....Each $1.80



No. 913

JEWS HARPS

Illustrations show about 2/3 actual size.

No.		Per Doz.
95	Common 2¼ inch Iron Frames	$ 50
97	Common 2½ inch Iron Frames	75
99	Common 3 inch Iron Frames	.85
971	2-inch Heavy Brass Frames, File finished	.95
972	2¼-inch Heavy Brass Frames File finished	1 10
973	2½ inch Heavy Brass Frames, File finished	1 20
974	3¼ inch Heavy Brass Frames File finished	1.50
911	Smith's 2-inch Iron Frames Tinned, Brass-Tip'd Tongues	2 50
912	Smith's 2½-inch Iron Frames, Tinned, White Metal Tipped Tongues	3.30
913	Smith's 2¾ inch Iron Frames Tinned, White Metal Tipped Tongues	4 00
914	Smith's 3-inch Iron Frames Tinned, White Metal Tipped Tongues	4 80

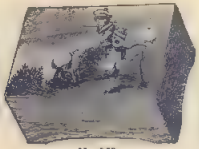
BULL-DOG BELL HARP.

10 Double Holes, 20 Reeds, Brass Reed Plates, Nickel Covers, Bells and Trimmings.

No. 9524.....Each $0.90

MUSICAL BOXES

No. 994

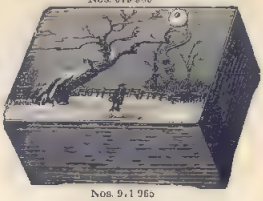


No. 963

Nos. 979 989

Nos. 992 994, Open View.

No. 991



Nos. 9.1 985

CRANK MOVEMENTS.

No. 958	1 Air, 12 teeth, round nickel case, chromo top	Each	$1.10
No. 959	1 Air, 18 teeth, round nickel case, chromo top	Each	1.40
No. 963	2 Airs, 18 teeth, oblong wood case, chromo top	Each	2.00
No. 964	2 Airs, 36 teeth, large round nickel case, chromo top	Each	2.90
No. 971	3 Airs, 18 teeth, oblong wood case, chromo top	Each	2.40
No. 9fo	3 Airs, 36 teeth, wood case, chromo top, size 6⅛x4⅝x2⅜	Each	4.00

IMPROVED SPRING MOVEMENTS—WITH ATTACHED KEY.

No. 973	Key Winding, 2 airs, 28 teeth, self changing, 1⅝-inch cylinder, size 4½x3⅛x2½, chromo top	Each	$4.00
No. 980	2 Airs, 1⅞-inch cylinder, self-changing wood case, chromo top, etc.	Each	5.35
No. 986	2 Airs, 36 teeth, 1⅝-inch cylinder, self-changing, chromo top, glass cover, size 4⅝x3⅛x2½	Each	6 00
No. 987	3 Airs, 36 teeth, 2⅛-inch cylinder, size 5¼x3⅝x3½, otherwise same as No. 986	Each	8.70
No. 988	4 Airs, 36 teeth, 2⅛-inch cylinder, size 5¼x3⅝x2½, otherwise same as No. 986	Each	10.00
No. 989	6 Airs, 36 teeth, 3-inch cylinder, size 5¼x3⅝x2½, otherwise same as No. 986	Each	14.70
No. 991	4 Airs, 2¾-inch cylinder, self-changing, wood case Swiss carved, oil painted landscape on panel	Each	16.70
No. 992	3 Airs, 2¾-inch cylinder, self-changing, fancy wood case with metal bound top	Each	13 35
No. 993	4 Airs, 2¾-inch cylinder, self-changing, fancy wood case, with metal bound top	Each	15.35
No. 994	6 Airs, 3-inch cylinder, self-changing, fancy wood case, with metal bound top	Each	20.00

Nos 9218 9219

Imitation Rosewood Cases, Decalcomanie Ornamented Top, Interior Glass Covers, Spring Lever Movements, Tune Dial, Ratchet Lever Winding.

No. 9250	6 Airs, 3¼-inch cylinder	Each	$21.70
No. 9254	8 Airs, 4¼-inch cylinder	Each	25.35
No. 9256	10 Airs, 6⅛-inch cylinder	Each	33.35
No. 9258	12 Airs, 8 -inch cylinder	Each	44.70

Cases with Rosewood Tops, Variegated Wood Inlaying, Interior Glass Covers, Nickel Plated Spring Lever Movements, Outside Crank Winding.

EACH WITH TUNE DIAL AND SAFETY CHECK.

No. 9318	12 Airs, 13 inch cylinder, tune skipper and speed regulator case 11x27 inches	Each	$84.00
No. 9319	12 Airs, 13 inch cylinder, with Zither attachment tune skipper and speed regulator, case 11x27 inches	Each	87.20

A Zither-like tone is attained through the medium of the Zither attachment, which is an adjustable bar that may be detached at will.

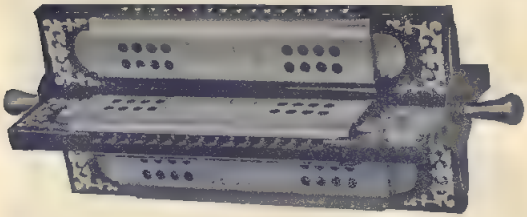
THE ARION MUSIC BOX.

No. 9300

This instrument is particularly well made, and considering its size, its tone is powerful. As a premium, it is an ideal, nothing more likely to please can be named, than the Arion Music Box. It is a self-playing, key-winding instrument. The case is made of natural white wood, and is handsomely finished, and has a chromo top. Size 8x5½x4 inches.

No. 9300 Price, including six tune sheets Each $13.35

Highest Grade Harmonicas and Jews Harps



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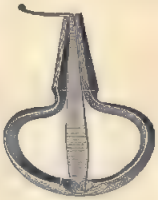

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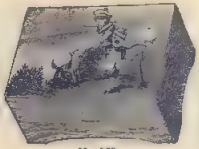

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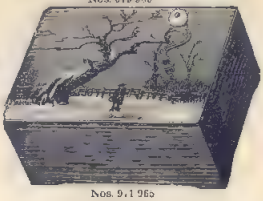
Nos. 992 994, Open View.

No. 991



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No. 971	3 Airs, 18 teeth, oblong wood case, chromo top	Each	2.40
No. 9fo	3 Airs, 36 teeth, wood case, chromo top, size 6⅛x4⅝x2⅜	Each	4.00

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No. 987	3 Airs, 36 teeth, 2⅛-inch cylinder, size 5¼x3⅝x3½, otherwise same as No. 986	Each	8.70
No. 988	4 Airs, 36 teeth, 2⅛-inch cylinder, size 5¼x3⅝x2½, otherwise same as No. 986	Each	10.00
No. 989	6 Airs, 36 teeth, 3-inch cylinder, size 5¼x3⅝x2½, otherwise same as No. 986	Each	14.70
No. 991	4 Airs, 2¾-inch cylinder, self-changing, wood case Swiss carved, oil painted landscape on panel	Each	16.70
No. 992	3 Airs, 2¾-inch cylinder, self-changing, fancy wood case with metal bound top	Each	13 35
No. 993	4 Airs, 2¾-inch cylinder, self-changing, fancy wood case, with metal bound top	Each	15.35
No. 994	6 Airs, 3-inch cylinder, self-changing, fancy wood case, with metal bound top	Each	20.00

Nos 9218 9219

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The Autocar

Established 1895

The Leading British Motor-Car Paper

Established in advance of all others and still far ahead of them all

Profusely Illustrated

¶ "The Autocar" provides, week by week, an interesting and authoritative review of the progress of automobilism in the United Kingdom, and should be read by every progressive maker and dealer who "knows how" to benefit by the experience of others.

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¶ American manufacturers of motor vehicles and accessories who wish to expand their business should look to the British Isles. The market is a rich one, and by advertising in "The Autocar" it is possible to reach the entire BUYING section of the public which is interested in automobilism.

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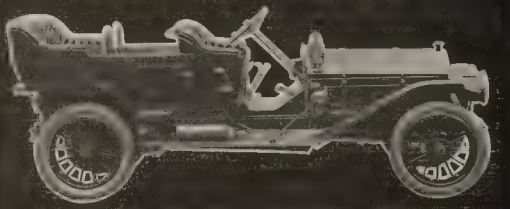
THE CHADWICK

ENGINEERING WORKS AN-
NOUNCE THAT THE NEW
MODELS ARE NOW READY
for DELIVERY. THE LINE IS
MOST COMPLETE, EMBRAC-
ING SEVEN, FIVE, FOUR and
TWO PASSENGER MODELS
ALL IN SIX CYLINDERS,
SIXTY HORSE POWER.



GREATER POWER, MORE SPEED, GREATER FLEXIBILITY, EMBODY-
ING REFINEMENTS TENDING TOWARDS PERFECT SMOOTHNESS AND
QUIETNESS OF OPERATION.

THE CAR OF EXCLUSIVENESS.

POTTSTOWN, PA. AUGUST 1st, 1910.

ADVANCE SPECIFICATION SHEETS WILL BE FORWARDED ON REQUEST

LICENSED UNDER SELDEN PATENT

HARMONICAS

PRICES PER DOZEN

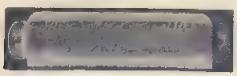
No. 9502

No. 9501 Little Diamond. 8 single holes, zinc reed plate, nickel covers. In pasteboard boxes. Per doz. ... $0.85
No. 9502 Improved Pipe Organ. 10 single holes, 8 reeds, white metal reed plate, nickel covers. Per doz. $1.20

No. 9503 Princess Harp. 12 single holes, 10 reeds, white metal reed plate, fancy nickel covers. Per doz. $1.30

No. 9504 The Boss Richter. 10 single holes, 20 reeds, white metal reed plates, nickel covers, assorted keys. Per doz. . $1.75

No. 9505 The Dutch Band Harp. 10 single holes, 20 reeds, white metal reed plate, nickel curved cover, assorted keys. Per doz. $2.25



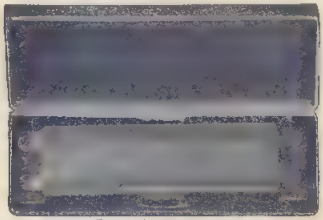
No. 9506 The Pocket Harmonica. Miniature. 3½ inches long. 10 single holes, 20 reeds, nickel cover, superior quality, assorted keys. Per doz. $2.40

No. 9507 The Marvelous. 10 single holes, 20 reeds, brass reed plates, nickel covers, assorted keys. Per doz $2.25

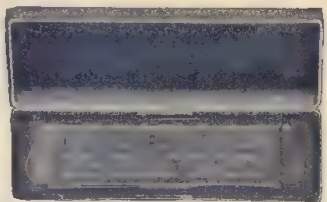
No. 9508 Glorioso Harp. Length 4½ inches. 14 double holes, 14 reeds, brass plates, nickel covers. Per doz. $2.70

No. 9509 The Meteor. Length 3⅛ inches. 10 single holes, 20 reeds, nickeled reed plates, nickel covers and small bugles. Per doz. $3.15

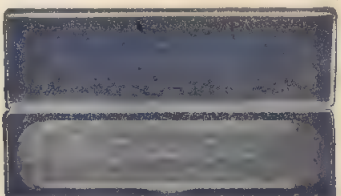
No. 9510 The Extra Post. 10 single holes, 20 reeds, white nickeled plates, covers lithographed in colors. Per doz. $3.15



No. 9236 The Navy Harp. 10 single holes, 20 reeds, brass plates, heavy convex brass covers, open back, nickel plated steel bronze reeds, Asst. keys. Per doz. $5.65



No. 9382 The Globe Trotter. 10 single holes, 20 reeds, brass plates, nickel covers, Asst. keys. Per doz. $5.15



No. 9521 [illegible] 10 single holes, 20 superior quality reeds, brass plates, substantial nickel covers, assorted keys in hinged case. Per doz. $4.90

We purchased from the Manufacturers gross quantities of Harmonicas, which we quote in one dozen lots at the gross price, thus offering the above at lowest possible prices. These goods should be in your stock—sell fast. Order one dozen now and more later.

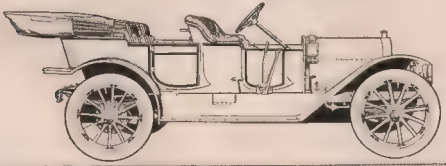
new models

CLUTCH.	The clutch is of the flywheel cone type faced with a commercial packing obtainable anywhere, and being an admixture of asbestos and other elements that *cannot burn out*. It finds and maintains its own seat, while spring actuated protruding shoes first accept the drive.
TRANSMISSION.	Transmission is of the selective sliding gear type, with "Hess-Bright" ball bearings. Drive shaft universal joints are of new type and encased.
AXLES	The front axle is double jaw type "I" beam section, and rear axle is of full floating design without transverse strains.
MARK 85 BODIES.	Most attractive are the Columbia bodies for 1911 season. All are vestibuled. There is a vestibuled four-passenger close coupled roadster, a six-passenger vestibuled roadster, and a seven-passenger vestibuled touring car. Vestibuled limousines and landaulets of seven-passenger capacity are supplied.
MARK 85 PRICES.	The four-passenger roadster is $3,300; six-passenger roadster, $3,400; seven-passenger touring car, $3,500; the Limousine, $4,800; and Landaulet, $4,900.

Mark 48 lot 5 for 1911

Mark 48 Columbia cars were first introduced in 1906, and in years since have been increased in power, efficiency and performance. The model for 1911 is known as Mark 48 lot 5. Numerous small refinements have been made for the new season productions, but the principal change is in body designs, all bodies now being of the vestibule type. The prices remain the same as in other years, and are: five-passenger vestibuled touring car and four-passenger vestibuled roadster, $2,750; Limousine and Landaulet town cars, $3,850.

The new catalog of 1911 Columbia cars—a very comprehensive work mailed on request.



The Columbia Motor Car Co.

Hartford, Connecticut

Licensed under Selden Patent

THE FAULTLESS SELF-FILLING FOUNTAIN PEN

The Most Perfect Self-Filling Fountain Pen Made.

The Faultless Self-Filling Fountain Pens are of very clean-cut construction yet so simple that they never get out of order. The reservoir is filled with ink by mere pressure of the finger. They are made by skilled mechanics from the best grade of materials obtainable. The pen points are extra heavy 14 karat solid gold tipped with the best genuine iridium that never wears out. All pens are furnished in fine, medium or stub points. Each pen guaranteed by us to give perfect satisfaction for **five years.**

BI-SECTED VIEW SHOWING THE DIFFERENT PARTS.

DIRECTIONS FOR FILLING.

Turn the pen section around until opening in barrel shows inner rubber tube with metal bar cross. Dip pen in ink until ink entirely covers the gold pen. Then compress metal bar with finger and release it, filling pen. Then turn pen section back to original position so that inner rubber tube cannot be seen.

No. B10 Fitted with No. 1, 14 karat solid gold pen, black, mottled or chased holder ..... Each $2.00
No. B211 Fitted with No. 2, 14 karat solid gold pen, black, mottled or chased holder ..... Each 2.70
No. B21 Fitted with No. 3, 14 karat solid gold pen, black, mottled or chased holder ..... Each 3.35
No. B41 Fitted with No. 4, 14 karat solid gold pen, black, mottled or chased holder ..... Each 4.00
No. B50 Fitted with No. 5, 14 karat solid gold pen, black, mottled or chased holder ..... Each 4.70
No. B60 Fitted with No. 6, 14 karat solid gold pen, black, mottled or chased holder ..... Each 5.35
No. B80 Fitted with No. 8, 14 karat solid gold pen, black mottled or chased holder ..... Each 6.70

No. B30½ Fitted with No. 3, 14 karat solid gold pen, non-leakable cap, black or mottled holder, gold filled engraved band..... Each $4.00

No. B32 Fitted with No. 2, 14 karat solid gold pen, two gold filled bands, chased holder, plain cap..... Each $3.35

No. B36 Fitted with No. 3, 14 karat solid gold pen, sterling silver or gold filled mounting, hand embossed Florentine filigree..... Each $10.00

No. B55 Fitted with No. 5, 14 karat solid gold pen, gold filled mounting, heavy hand embossed ..... Each $16.00

No. B28 Fitted with No. 2, 14 karat solid gold pen gold filled barrels, black rubber ends ..... Each $8.70

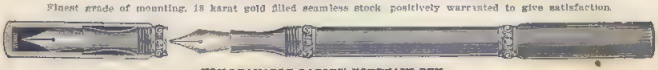
THE NEW NON-LEAKABLE FOUNTAIN PEN

Can Be Carried in Any Position and Will Not Leak.

No. B103 Fitted with No. 2, 14 karat solid gold pen, black or mottled holder, vest pocket size ..... Each $3.35
No. B104 Fitted with No. 2, 14 karat solid gold pen, black or mottled holder, regular size ..... Each 3.35

LADIES' FOUNTAIN PENS. NON-SELF FILLER

Finest grade of mounting, 18 karat gold filled seamless stock positively warranted to give satisfaction.



NON LEAKABLE LADIES' FOUNTAIN PEN.

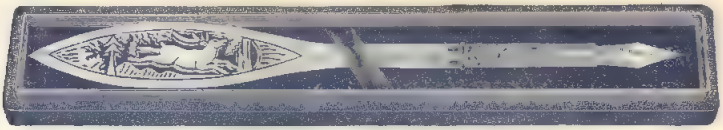
No. B102 Fitted with No. 1, 14 karat solid gold pen, two gold filled bands, black or red rubber holder ..... Each $4.00
No. B102 Fitted with No. 1, 14 karat solid gold pen, [illegible] ..... Each 3.70

No. B100 Fitted with No. 1, 14 karat solid gold pen, gold filled mounting ..... Each $6.70

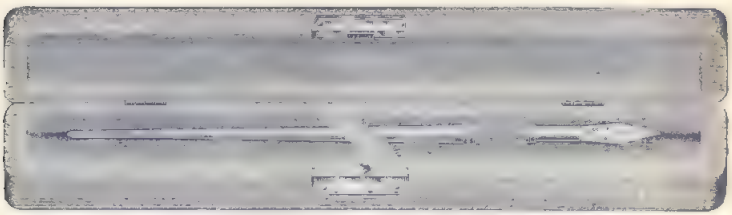
FINE ASSORTED CASE GOODS

PUT UP IN PLUSH BOXES.

No. 9336 10 karat gold pen in pearl desk holder, size of illustration, in plush lined box . Each, $1.[illegible]



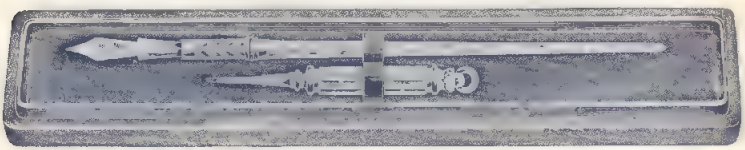
No. 9336 Gold filled, seamless, fancy carved, chased pearl desk holder with No. [illegible] pen, in handsome plush box. Price each [illegible]
No. 9337 Gold filled, seamless, fancy carved, chased pearl desk holder with No. 2 pen, in handsome plush box. Price each [illegible]



Handsome velvet case, with pen and gold filled pearl holder

		No. 1 Pen.	No. 2 Pen.	No. 3 Pen.
No. 9338	14 karat ..... Price per set	$3.36	$3.80	$[illegible]
No. 9339	10 karat ..... Price per set	2.10	2.45	[illegible]

[illegible] assorted colored boxes



No. 9340 14 karat, gold filled, seamless, pearl desk holder with No. 1 pen and white pearl screw pencil, in handsome velvet box . Price per set $[illegible]
No. 9341 10 karat, gold filled, seamless, pearl desk holder with No. 1 pen and white pearl screw pencil, in handsome velvet box . Price per set [illegible]

Gold pen, in gold filled, seamless rustic pearl desk holder with ladies' gold filled pencil, in velvet lined box

No. 9342 14 karat, No. 1 pen ..... Price per set $[illegible]
No. 9343 10 karat, No. 1 pen ..... Price per set [illegible]

The Gillette Safety Razor

No. 460, etc.

No. 461

No. 00.

	Per set.
No. 460—Standard Razor Set. Triple Silver Plated Handle, 12 Blades, Morocco Grain Cowhide Case	$ 5 00
No. 466—Triple Silver Plated Handle, 12 Blades, Real Seal Case	6.00
No. 468—Triple Silver Plated Handle, 12 Blades, English Pigskin Case, Chamois Lined	6.00
No. 466A—Sterling Silver Handle, 12 Blades, Real Seal Case	12.00
No. 466B—Gold Plated Handle, 12 Blades, Real Seal Case	7.50
No. 466C—Gold Plated Handle. Special Hand Chased with Monogram on Cap, 12 Blades, Real Seal Case (to order only)	16.00
No. 468A—Sterling Silver Handle, 12 Blades, English Pigskin Case	12 00
No. 468B—Gold Plated Handle, 12 Blades, English Pigskin Case	7.50
No. 468C—Gold Plated Handle, Special Hand Chased with Monogram on Cap, 12 Blades, English Pigskin Case (to order only)	16.00

No. 00—Standard Combination Set. Triple Silver Plated Handle, 12 Blades, Good Quality Badger Hair Lather Brush and Stick Shaving Soap in Triple Silver Plated Holders, Goat Skin Seal Grain Case 7.50

No. 461—Triple Silver Plated Handle, 12 Blades, Good Quality Badger Hair Telescope Lather Brush, Stick Shaving Soap in Triple Silver Plated Holder, Morocco Grain Cowhide Case 6.50

Razor Strops

Per dozen

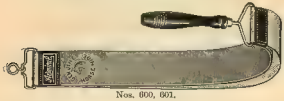
No. 25X—Royal Worcester. Two Cushion, Sharpening and Finishing Surfaces. Nickeled Wire Frame and Handle 12½ inches long..... $9 00

Per dozen

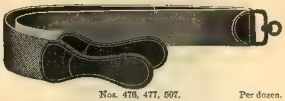
No. 86C—Genuine Emerson. One Oval Side and one Flat Side. Sharpening and Finishing Surfaces. Wood Handle 13½ inches long..... $6.00

Per dozen

No. 1—Velvac. Special Tanned Colt Skin. Sharpening and Finishing Surfaces. 2¼ x 23 inches.. .. $1 50
No. 2— " " " " " " " " " " 2 x 10 " 1.25



Nos. 600, 601.



Nos. 476, 477, 507.

Per dozen.

No. 600—Combination Light Weight Black Horse Hide and Finely Woven Hose Wood Handle. 2x21 in. $2 50
No. 601— " " " Tan " " " " " " " " 2x21 " 2.50
No. 476— " Oiled Horse Hide and Finely Woven Hose. Red Leather Handles. 2 x 21 in... 3.00
No. 477— " Buffed " " " " " " " " 2 x 21 " ... 3 00
No. 507— " Black Horse Hide and English Belt Web. Russian Leather Handles. 2¼ x 26 in. 7.00

Nos. 494, 496.

Nos. 607, 608, 498, 496.

Per dozen.

No. 607—Combination Buffed Horse Hide and English Belt Web Padded Handle 2¼ x 24 inches.. 8 00
No. 608— " Oiled " " " " " " " " 2¼ x 24 " 4 00
No. 498— " Black Diamond Shell and Medium Black Canvas. Padded Handles. 2¼ x 14 in. 11 00
No. 496— " Heavy Brown Fin. Horse Hide Shell and Med. Hose. " " 2¼ x 24 " 12 00
No. 490— " Black Diamond Horse Hide and English Belt Web. " " 2¼ x 24 " 5 50
No. 494— " Heavy Tan Horse Hide and Oil Finished Porpoise. " " 2¼ x 24 " 8.00

Mars Line Fine Razor Strops.
Handsomely Finished, with Gold Plated Clasp Swivel and Loop. Fine Alligator Leather Handles. Size, 2¼ x 26 inches.

Per dozen.

No. 1001—Chemically Prepared Chrome Calf and Brown English Ooze Leather, Velvet Finish..... ....
No. 1002—Selected Black English Horse Shell and Canary English Ooze Leather, Velvet Finish.....
No. 1003—Green English Ooze Leather, Velvet Finish and Specially Tanned English Calf.....
No. 1004—Purple English Ooze Leather, Velvet Finish, Belfast Linen Hose.....

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

THE CHAINLESS TRUCK!

A SHAFT-DRIVE AND FULL FLOATING REAR AXLE MAKE THE GLEASON SUPREME AMONG LIGHT DELIVERY CARS!

¶ The Chain Drive is all O.K. on a 2 or 3-ton truck. But not so on a medium light-weight Commercial Car where **both** speed and efficiency are required. ¶ **GLEASON** Commercial Cars are made on one chassis only—a chassis that has stood the test of five long years without a single radical change. The **GLEASON** shaft-drive does away with the annoyance of cumbersome chains. The **GLEASON** Full Floating Rear Axle eliminates all rear axle trouble.

The GLEASON

Is a stylish and a practical Commercial Car. It is furnished with either closed or open body. Carrying capacity, 1000 pounds. A sturdy car and a substantial car. Yet a model of simplicity in construction. Made with an eye single to its thoroughness — its completeness. Pneumatic or cushion tires, as desired.

$1050 to $1400

¶ Sliding gear transmission, with three speeds forward; multiple disc clutch with cork inserts and full floating rear axle.

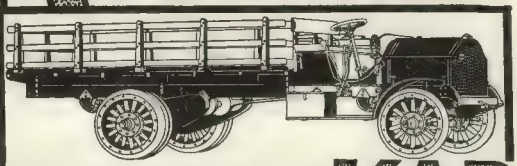
¶ The **GLEASON** is famed for its economical upkeep. Its high-class construction leaves practically nothing to get out of order or go wrong. And its powerful engine enables it to go over any kind of road and in all kinds of weather.

¶ This car will stand the closest investigation—will make good under the severest test.

¶ May we supply you with full information? Will you kindly write or wire us to-day? We want red-blooded agents in all unoccupied territory.

K. C. Vehicle Co, Manufacturers, Kansas City, Mo.

KISSEL KAR



KISSEL KAR TRUCK

Capacity, 3 to 4 Tons

Equipped with all types of bodies. Every essential of an economical power driven truck is incorporated in the Kissel Kar Truck. It is dependable for use in any kind of weather. It is such a truck as can be expected to expedite deliveries and to lower costs.

DOUBLE DRIVE

The patented differential lock, with foot lever control applies traction to both rear wheels at will of driver. Where one wheel is in a hole or on ice and can't get out, by locking both wheels the wheel on solid ground will do the pulling. This is a distinctive feature with the Kissel Kar Truck, making a *two wheel drive* when necessary.

WATCH FOR OUR

1911 PLEASURE CAR ANNOUNCEMENT

In Next Month's Issue

FOUR SPEED TRANSMISSION.

Selective type, 4-speeds forward and reverse, direct drive on third speed for load hauling, geared up 25 per cent. on fourth speed to make time without racing engine when running empty.

The very highest grade materials are employed throughout, treated by processes to give greatest possible strength and durability. A great factor of strength is secured by the ability of the truck to adjust itself perfectly to uneven roads, overcoming the unusual strains. This is accomplished by universal joints in th distance rods which preserve a lateral balance of the load regardless of the position of the wheels. Special spring suspension carries engine without vibration whether truck is empty or loaded.

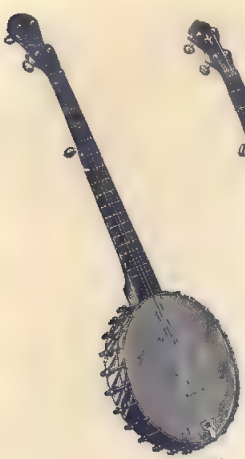
Leather-faced clutch with springs under leather, and self-seating throw-out bearings, full universal joints between clutch and transmission, 36 x 4 in. front tires, 36 x 4 in. dual rear.

50 H. P., $3500, wheel base, 144 inches—tread, 68 inches. Total length, 230 inches; load space, 6 feet by 12 feet 5 inches. Speed on direct drive, 10 to 12 miles, on the fourth speed, 15 miles. Liberal proposition to responsible dealers

KISSEL MOTOR CAR CO., 120 Kissel Ave., Hartford, Wis.

Licensed Under Selden Patent

BANJOS



Nos. 91109-91124.

No. 9739.

No. 9831.

No. 9839.

10-INCH.

No. 9607 Nickel shell, wood lined, calfskin head, 7 nickel-plated hexagon brackets, single wired edge shell, raised frets, position dots, imitation mahogany neck.....Each $ 6.75
No. 9609 Same description as No. 9607, with 9 nickel brackets.....Each 7.00

11-INCH.

Nickel Shells, Wood-Lined, Calfskin Heads.

No. 91109 13 nickel-plated hexagon brackets, raised frets, birch neck.....Each $ 7.25
No. 91110 17 nickel-plated hexagon brackets, raised frets, birch neck.....Each 7.75
No. 91111 25 nickel-plated hexagon brackets, raised frets, birch neck.....Each 8.75
No. 91122 25 nickel-plated hexagon brackets, raised frets, birch neck, wired edge.....Each 9.25
No. 91124 39 nickel-plated hexagon brackets, raised frets, birch neck, wired edge.....Each 10.75

11-INCH AMERICAN MAKE BANJOS

DOUBLE WIRED EDGE.

No. 9825 Nickel Plated, Double Wired Shell, 10¼ inches in diameter, 3 octave scale, 25 hexagon brackets, rabbeted top band, calfskin head, mahogany finished neck, heavy ebony finger-board and head piece, pearl position dots, black pegs, nickel-plated tail piece.....Each $15.25
No. 9831 Same description as No. 9825, with 31 brackets.....Each 17.25

THE IMPROVED MYSTIC.

No. 9731 Wired Nickel-Plated Shell, wood-lined, 11 inches in diameter, 3 octave scale, 31 elbow brackets, calfskin head, rabbeted top band, neck mahogany finished, ebony finger-board and head piece, inlaid with large figure, white celluloid pegs, nickel-plated tail piece.....Each $17.25
No. 9739 Same description, with 39 brackets.....Each 18.25

These Banjos are made with extra care, are handsomely ornamented, carefully adjusted and are intended to supply the want of a well-made professional instrument at a medium price.

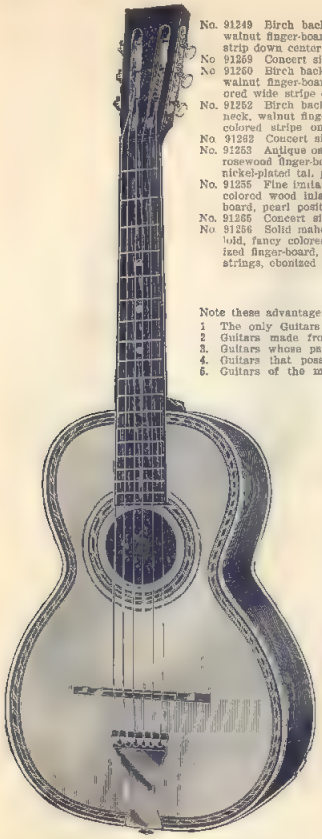
No. 9826 Nickel Plated, Double Wired Shell, wood-lined, 11 inches in diameter, 3 octave scale, 25 elbow brackets, heavy rabbeted top band, calfskin head, imitation cherry neck, heavy ebony finger-board and head piece. Inlaid with elaborate pearl figures, patent pegs, nickel-plated tail piece.....Each 25.75
No. 9839 Same description as No. 9826, with 39 brackets.....Each 29.50

No. 9824

PROFESSIONAL.

No. 9832 Nickel Plated, Double Wired Shell, wood-lined, 3 octave scale, 11 inches in diameter, 31 elbow brackets, heavy rabbeted top band, extra fine calfskin head, dark mahogany finished neck, heavy ebony finger-board and head, beautifully inlaid with Japan pearl figures, fancy white pegs, best quality of strings, special bridge, nickel-plated tail piece.....Each $28.25
No. 9833 Nickel Plated, Double Wired Shell, wood lined, 3 octave scale, 11 inches in diameter, 31 elbow brackets, Rogers calfsk n head, heavy rabbeted top band, carved mahogany neck, heavy ebony finger-board, head piece and heel piece, beautifully inlaid with Japan pearl, engraved, patent pegs, special bridge, best quality of strings, new style nickel-plated tail piece.....Each 40.75
No. 9824 Heavy Curly Maple Shell, bottom edge rounded with ebony and inlaid with fancy design. Top part has meta. rings on which the head rests. 24 Premier brackets, metal grooved top band, beautiful curly maple neck, with heavy ebony finger-board and heel piece; back of head covered with ebony also ebony strip down center; colored wood strips under ebony parts, giving a very decided contrast; most elaborately engraved pearl figure in the head piece, also fancy pearl figures in finger-board, patent pegs, selected strings, special bridge, and an entirely new design tail piece.....50.75

GUITARS



No. 91249 Birch back and sides, enlarged model, rosewood finish, imitation mahogany neck, walnut finger-board, pearl position dots, inlaid sound-hole, strung with steel strings, broad strip down center of back.....Each $ 7 00

No 91259 Concert size, same description as 91249.....Each 8.25

No 91260 Birch back and sides, enlarged model, mahogany finish, imitation mahogany neck, walnut finger-board, pearl position dots, inlaid sound-hole, nickel-plated tail piece, fancy colored wide stripe on back, strung with steel strings .....Each 7.00

No. 91252 Birch back and sides, enlarged model, imitation rosewood finish, mahogany finish neck, walnut finger-board, pearl position dots, inlaid sound-hole, celluloid bound edge, fancy colored stripe on back, nickel plated tail piece, strung with steel strings.....Each 8.25

No. 91262 Concert size, same description as 91252.....Each 9.75

No. 91253 Antique oak back and sides, enlarged model, rubbed finish, imitation mahogany neck, rosewood finger-board, pearl position dots, inlaid sound-hole, fancy colored wood stripe in back, nickel-plated tail piece, strung with steel strings.....Each 9.75

No. 91255 Fine imitation rosewood finish, back and front edges neatly bound with celluloid, fancy colored wood inlaying around sound-hole and edges and down center of back, ebonized finger-board, pearl position dots, brass patent heads, metal tail piece, steel strings .....Each 11.25

No. 91265 Concert size, same description as 91255.....Each 12.75

No 91256 Solid mahogany, dark finished, hand rubbed, both edges neatly bound with white celluloid, fancy colored wood inlaying around sound-hole and edges and down center of back, ebonized finger-board, pearl position dots, rosewood veneered head piece, brass patent heads, steel strings, ebonized bridge .....Each 13.75

AMERICAN MAKE GUITARS

Note these advantages in purchasing Guitars of our make. You secure for your trade:

1 The only Guitars having a mathematically correct finger-board.
2 Guitars made from thoroughly seasoned material by skilled workmen, working in daylight.
3. Guitars whose patent heads have no "lost motion."
4. Guitars that possess a clear, far-carrying musical tone.
6. Guitars of the most graceful model ever designed.

STANDARD SIZE.

No. 9490 Mahogany finish back and sides, hand polished, spruce top, fancy colored wood inlaying around sound-hole edge inlaid and bound with celluloid, neck mahogany finish, finger-board with pearl position dots, our own make nickel-plated patent head, No. 930 metal tail piece, nickel plated, strung with steel strings.....Each $9 75

No. 9505 Dark mahogany finish back and sides, hand polished, spruce top, fancy colored wood inlaying around sound-hole, edge inlaid with fancy colored woods and bound with celluloid, neck mahogany finish, finger-board with pearl position dots, our own make nickel plated patent head, No. 930 metal tail piece, nickel plated, strung with steel strings..Each 10.75

No 9515 Birch back and sides, dark mahogany finish, hand polished, spruce top, broad, fancy colored wood inlaying around sound hole and edge, top and back edges bound with celluloid, neck mahogany finish, finger-board with pearl position dots, our own make nickel-plated patent head, No. 930 metal tail piece, nickel plated, strung with steel strings.....Each 11 25

THREE-QUARTER SIZE

No. 9610 Same description as No 9615, Three-Quarter Size, strung with steel strings on metal tail piece No. 930.....Each 11.25

STANDARD SIZE.

No 9620 Beautifully figured birch back and sides, dark mahogany finish, hand polished, spruce top, fancy colored wood inlaying around sound-hole, corded inlaying on edge, top and back edges bound with celluloid, fancy inlaid strip in back, neck mahogany finish, veneered head piece, rosewood finger-board, pearl position dots, our own make nickel-plated patent head, No. 935 metal tail piece, nickel plated, strung with steel strings .....Each 15 25

No. 9725 Birch back and sides, rosewood finish, spruce top, broad fancy colored corded wood inlaying around sound hole and edge, top and back edges bound with white celluloid, fancy colored stripe in back, body grained a rich rosewood and beautifully finished, neck mahogany finish, veneered head piece, rosewood finger-board, pearl position dots, our own make nickel-plated patent head, No. 935 tail piece, nickel-plated, strung with steel strings .....Each 12.75

No. 9985 Mahogany back and sides, spruce top, broad fancy colored wood inlaying around sound-hole, top edge inlaid with fancy colored wood and bound with white celluloid, body finished a beautiful shade of light mahogany, hand polished, neck mahogany finish, finger-board with pearl position dots, our own make nickel-plated patent head, No. 930 metal tail piece, nickel plated, strung with steel strings.....Each $13.25

No. 9980 Beautiful figured dark mahogany back and sides, hand polished, broad fancy corded colored wood inlaying around sound-hole and edge, top and back edges bound with white celluloid, broad fancy corded stripe in back, mahogany neck, rosewood veneered head piece, ebony finger-board bound with celluloid, and pearl position dots, our own make nickel-plated patent head, ebony bridge, strung with gut strings.....Each 21.25

No. 9840 Quartered oak back and sides, hand polished, spruce top, broad fancy colored wood inlaying around sound-hole edge inlaid with broad fancy colored wood inlaying and bound with white celluloid, neck mahogany finish, finger-board has pearl position dots, our own make nickel-plated patent head, No 930½ metal tail piece, nickel plated, strung with steel strings ... Each 11.25

No. 9846 Quartered oak back and sides hand polished, spruce top, broad fancy colored wood inlaying around sound-hole, top and back edges inlaid with broad stripe of fancy colored wood and bound with white celluloid, broad stripe of fancy colored wood inlaying down center of back, neck mahogany finish, veneered head piece, rosewood finger-board, pearl position dots, our own make nickel-plated patent head and metal tail piece, strung with steel strings.....Each 15 25

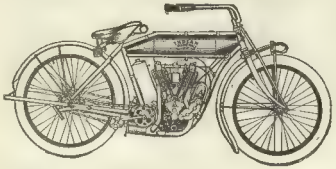
CONCERT SIZE.

No. 9860 Concert Size.—Beautiful Danish oak back and sides, spruce top, broad corded fancy colored wood and celluloid inlaying around sound-hole, top and back edges bound with white celluloid, fancy colored wood stripe in back, mahogany neck, rosewood veneered head piece, body and neck beautifully hand polished, ebony finger-board bound with celluloid, pearl position dots, our own make nickel-plated patent head, ebony bridge, strung with gut strings.....Each 18.75

AFTER ALL

Actions Speak Louder Than Words

THE INDIAN



is Good not only at one thing, but at Everything—and it overwhelms the so-called specialists at their own game, whatever it may be.

It is the One All Around Motorcycle

THE HENDEE MFG. CO., **Springfield, Mass.**

CHICAGO BRANCH
1251 Michigan Ave.

[MEMBER M. M. A]

LONDON DEPOT
184 Gt. Portland St.

YALE Motorcycles

Hold the world's record for endurance. Operated at lowest up-keep cost of any. Ran 132 hours without fan or other cooling device, and DID NOT OVER-HEAT

LONG STROKE MOTOR; SILENT MUFFLER; COMFORTABLE TO RIDE; EASY TO OPERATE

RIDE A YALE—THEY NEVER FAIL

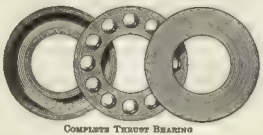
1910 Models being delivered. **Write today.**

Get our booklet, "What is Reliability?"

THE CONSOLIDATED MFG. CO., 1710 Fernwood Ave., Toledo, O.

THE STAR BALL RETAINER CO.

Lancaster, Pa., U.S.A.



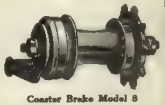
COMPLETE THRUST BEARING

RADIAL RETAINERS

Manufacturers of Radial Ball Retainers, Thrust Ball Retainers, Complete Thrust Bearings, Special Stamping, etc.

WOOD, MACHINE, CAP AND SET SCREWS; STOVE, TIRE, SINK AND AGRICULTURAL BOLTS

Corbin Duplex



Coaster Brake Model 8

Corbin Band Motorcycle

Coaster Brake Model 11

Corbin Two-speed

Coaster Brake Model 10

Steel and Brass Jack and Safety Chain; Steel and Brass Escutcheon Pins
Special Screws of Every Description

Complete Catalogue on Request

Licensed Coaster Brake Manufacturers

THE CORBIN SCREW CORPORATION

NEW BRITAIN, CONN.

NEW YORK CHICAGO PHILADELPHIA

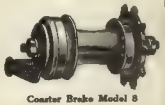
Kokomo Tires. The Kind that Does the Business

KOKOMO RUBBER COMPANY

KOKOMO, IND., - - U. S. A.

WOOD, MACHINE, CAP AND SET SCREWS; STOVE, TIRE, SINK AND AGRICULTURAL BOLTS

Corbin Duplex



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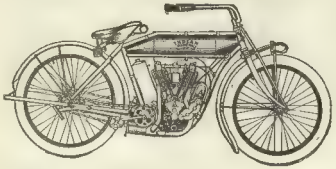

is Good not only at one thing, but at Everything—and it overwhelms the so-called specialists at their own game, whatever it may be.

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YALE Motorcycles

Hold the world's record for endurance. Operated at lowest up-keep cost of any. Ran 132 hours without fan or other cooling device, and DID NOT OVER-HEAT

LONG STROKE MOTOR; SILENT MUFFLER; COMFORTABLE TO RIDE; EASY TO OPERATE

RIDE A YALE—THEY NEVER FAIL

1910 Models being delivered. **Write today.**

Get our booklet, "What is Reliability?"

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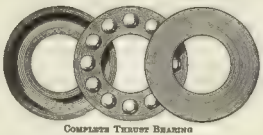

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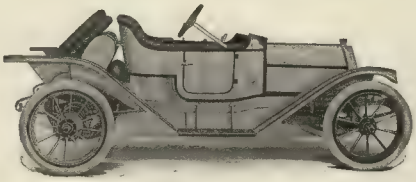
RADIAL RETAINERS

Manufacturers of Radial Ball Retainers, Thrust Ball Retainers, Complete Thrust Bearings, Special Stamping, etc.



MODEL 74-C

THE MECHANICAL GREYHOUND

LEFT-HAND STEER. Equipment: Wind-Shield, Shock Absorbers, Head-lights, Side-lights, Tail-light and Prest-o-lite Tank. Top and Extra Tires at additional cost. 26 H. P.; Cylinder, $4\frac{1}{2}$ x 4. Speeds: Three forward, one reverse. Wheel Base, 106 inches. Tires, 32 x $3\frac{1}{2}$ inches.

SOME GREYHOUND PERFORMANCES

ANDERSON, S. C.—August 5. Won hill-climbing contest; also one mile "free-for-all"; time, 52 seconds.
ATLANTIC, IA.—June 29. Won 15-mile race on half-mile track; time, 19 minutes, 36 seconds.
COLUMBUS, O.—July 29 and 30. Won five firsts and two seconds in seven events.
ATLANTA, GA.—July 30. Won two events in three, losing third by one-fifth second.
OMAHA, NEB.—Sept. 11. Won two firsts and one third in three events.
OMAHA, NEB.—October 1 and 2. Won eight firsts and one third in nine events.

Firestone COLUMBUS

We want responsible, energetic, wide-awake dealers who require the best, and who give the best representation in return

Write for Circular G

The Columbus Buggy Co.

COLUMBUS, OHIO

THE MILBURN LIGHT

FOR ALL CONSTRUCTION WORK

CHEAPER THAN OIL OR ARC LIGHTS

No. 2 Light

FIG. 4080.

Cost for 1,000 candle-power and upward, 1¼ cents per 1,000 candle-power per hour.

Made by water. Burns 50 per cent air.

Possesses:

No Pumps — No Gages
No Mantles — No Valves
No Globes — No Moving Parts

Lights instantly.

Requires no attention during use.

No. 1 Light

FIG 4080A

4-Z Light

FIG. 4081.

	No.	Size	Candle Power	List, Each
2½x5		"Midget"	6	$1.50
6 x12	1	"Handy"	50	13.50
10x24	2	"Compact"	1000	50.00
12x36	*3X	"Engineer"	5000	83.00
12x24 x36	4	"Twin"	10000	130 00

*The Universal Light lights 1500 ft. of work.

Adapted for Steam Shovels, Dredges, Sewers and Interior Lighting.

WHITE'S KEROSENE HOT BLAST ILLUMINATOR

No. 51

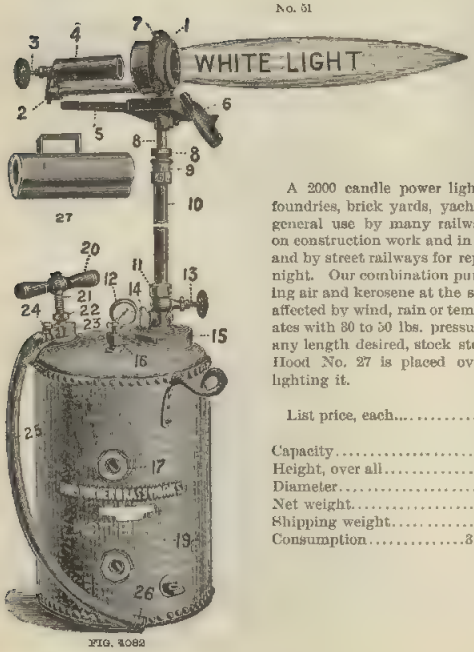


FIG. 1082

A 2000 candle power light, for railroads, foundries, brick yards, yacht clubs, etc. In general use by many railways for lighting on construction work and in clearing wrecks, and by street railways for repairing tracks at night. Our combination pump used, pumping air and kerosene at the same time. Not affected by wind, rain or temperature. Operates with 30 to 50 lbs. pressure. Stem made any length desired, stock stem, 4 feet long. Hood No. 27 is placed over burner after lighting it.

List price, each..... ..$150.00

Capacity.....20 gal.
Height, over all.....72 in.
Diameter.....28 in.
Net weight.....133 lbs.
Shipping weight.....175 lbs.
Consumption.....3 quarts per hour

7 horses, feed, at 45c per day	1,150
7 shoeing, vet., etc., 12 months, at $2	168
Total	$5,205
1 Truck—	
1 repair, paint, etc.	$165
1 driver, 300 days, $3	900
Gas and oil, 300 days, 48 miles x 3 1-2	480
Tires on above mileage	400
Total	$2,655

"It will be seen that according to this estimate, the $50.00 additional in the original purchase price of the motor truck as compared with the cost of the drays, is amply made up by the great savings in operation and other items. In addition to this it must be borne in mind that these figures do not include cost of stable rent, stable help, and stable equipment, which is greater in the case of horses than for motors. These figures are not only unbiased, but even favor the side of the horse dray more than it deserves. The life of an auto truck can be definitely predicted. That of a horse is problematical. Furthermore, the application of a proper method in the matter of hauls will bring the cost of carting far below the estimates quoted, and, finally, the division of the city into delivery zones will result in speed and economies unthinkable when unsystematized horse truck service is used."

The Minneapolis Motor & Truck Company, Minneapolis, has purchased ground upon which to erect a factory for turning out commercial vehicles.

TO REDUCE SIZE OF FREIGHT CARS

A bill which is of great interest to automobile manufacturers and dealers is that known as H. R. 26459, introduced at the last session of Congress. This bill proposes to reduce the maximum dimensions of freight cars to the following:

Outside width, 10 feet 6 inches.

Height from top of track rail to top of running board in center of roof of car, 14 feet 2 inches.

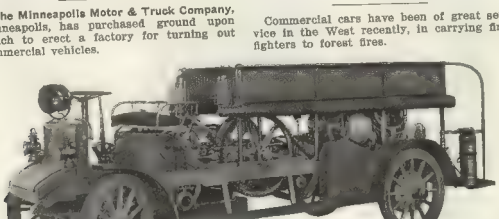
Loading on open cars not to exceed these dimensions.

Many of the cars which railroads have built for such freight as automobiles, furniture and vehicles, exceed these dimensions, and if the bill becomes a law, the railroads will be required to go to an expense in cutting down such cars which will only be equalled by the added expense which will be borne by automobile manufacturers and others in shipping.

Cars which now have an inside height of 10 feet, which is desirable particularly for double-decked loads, would have to be reduced in height to about 9 feet 3 inches inside.

The bill was referred to the Committee on Interstate and Foreign Commerce, and will probably be brought up again at the next session of Congress.

Commercial cars have been of great service in the West recently, in carrying fire fighters to forest fires.



The Luitwieler Motor Fire Apparatus.

This machine is designed and built for the rugged service that fire fighting apparatus must meet, and all tendency toward touring car practice has been eliminated. The wheel base is 130 in. The wheels 36x4 in. are fitted with solid rubber tires. The truck is 88 in wide, both front and rear wheels. Front axle I-beam, rear axle 2 in. square, axles and steering knuckles have "Timken" roller bearings. The motor is the "Trebert" special 4 cylinder 6x6½ with 60 H. P. (brake test). The transmissionis specially designed, has 3 speeds forward and reverse. On high gear the road speed is 30 miles per hour. The hose bed is 40 in wide by 9 feet long. Capacity 1,000 feet 2½ in hose. This machine will carry twelve men The searchlight moves with the wheels in the same radius. Two 3 gallon extinguishers are carried on the rear steps. One axe, one pike hook, one door opener, set of hand tools, two suction pipes, ladders when wanted. The pump is "non-pulsating" 2 cylinder wide, 6 in x 12 in. double acting with capacity of 880 gallons at 100 revolutions per minute. As the pump is operated through the transmission gears, one-half of the pump capacity can be used on intermediate gear with the full power of the motor to drive it, which increases the pressure about double. On low ge ar a smaller quantity can be pumped through a long line of hose with effective pressure at the nozzle.

THE NEW INCA BRASS WARE

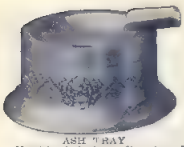
HIGHLY FINISHED, GREEN ENAMELED TRIMMINGS

The Ancient Peruvians, during the reign of INCAS were the only American nation who understood the fusing and alloying of metals.

Simple shapes, primitive mosaic borders, ornamented with grotesque human figures, faces and animals, were the most striking features of their metal work.

"INCA BRASS" follows closely the Arts of the early Peruvians, and the articles will be found to be not only beautiful but most interesting.

EXCEPTIONALLY DESIRABLE, USEFUL AND PRACTICAL ARTICLES "THE NEW BRASS CRAFT"

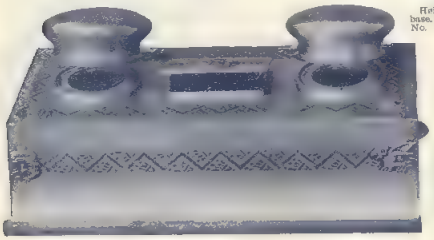


ASH TRAY
Height, 2 inches, diameter 5 inches.
No. 9863 Each. $...50

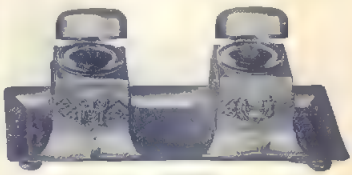
INK STAND
Height, 3⅛ inches, width, 2¾ inches
No. 9864 Each $4.25

... Inkwell
Height, 4⅜ inches; diameter of base, 4 inches.
No. 9865 Each $2.25

CANDLESTICK.
Height, 6½ inches; diameter of base, 4 inches
No. 9856 Each $4.25



INK SET
Height, 2¾ inches; width, 8¾ inches, length, 9 inches; 2 ink wells and 2 stamp compartments
No. 9857 Per set.... .. .. $16.00

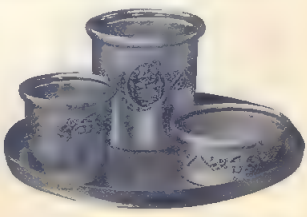


INK SET
Height, 2¾ inches; width, 3¾ inches, length 7½ inches
No. 9858 Per set. $4.75

All Orders Filled Same Day Received. No Delay.

CIGAR JAR.
Height, 6½ inches; diameter, 4¾ inches.
No. 9859 Each.. . .....$4.75

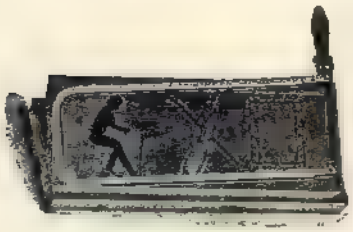
STATIONARY ASH TRAY AND MATCH HOLDER
Diameter of tray, 6 inches, height of match holder, 3 inches.
No. 9860 Per set. $2.75



SMOKING SET, FOUR PIECES.
Set contains tray, diameter 6¾ inches; ash receiver, diameter 3¾ inches; cigar jar height 2¾ inches, and match holder, height 2 inches
No. 9861 Per set. .. $4.25

BRACKET SAW FRAMES

IN SETS

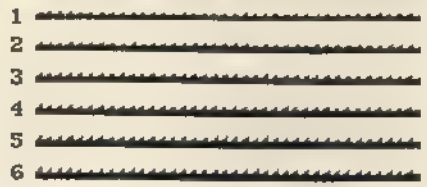


No. 2 These Sets are packed in Paper Boxes, and embrace a Spring Steel Saw Frame, Polished and Nickel Plated, 5x12 inches, having Patent Clamps for holding the Saw Blades and Rosewood Handle, three Sheets of Designs, embracing a great variety of fancy and useful articles, twelve Saw Blades, one Awl, one Sheet of Impression Paper.

Per dozen $15.00

One in a Box.

STAR SCROLL SAW BLADES



They have no equals for speed, durability, uniformity and smoothness of work.

Assorted, No. 1 to 6 ..... Per gross $1.00

One gross in a Package.

SCROLL SAWS

THE NEW ROGERS SAW

The entire Frame Work of the Rogers Saw is made from Iron, Painted and Japanned Black, and ornamented with red and gilt stripes.

The arbors, etc., are made of steel, and are carefully gauged and fitted to the bearings.

The Arms and Pitman are of the best Selected Ash.

All parts are made to Interchange.

Each Machine is provided with a Dust Blower, which is a very great advantage.

The machine has a Jointed Stretcher Rod, which allows the operator to throw the upper arm out of the way when adjusting his work or Saw. This joint also permits the machine to work much more freely than with a straight iron rod.

Twelve Saw Blades, Wrench, Sheet of Designs and Three Drill Points packed with each machine.

No. 1 Rogers Saw ..... Each $3.50
" 2 " " with Balance of Emery instead of Iron and with Tilting Table Nickeled instead of Japanned ..... Each 4.00

One in a Box.

The Packard

of 1911 has the

TRUFFAULT-HARTFORD SHOCK ABSORBER

AS REGULAR EQUIPMENT

The 1910 Packard, too, was Truffault-Hartford-equipped at the factory.

The Truffault-Hartford is the standard shock absorber. Used in all important motoring events. Regular equipment on the best cars. Sold on a guaranteed-to-give-satisfaction basis—it always makes good.

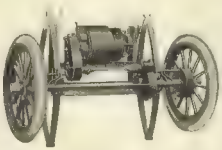
Will fit any car and make any car fit for any road

1911 Packard Touring Car. Truffault-Hartfords, Regular Equipment.

Hartford Suspension Company

EDW. V. HARTFORD, President

The New Searchlight
Gas Tank
For Automobile Lighting
Now Ready
GUARANTEED Greater Number of Hours' Lighting, Purer Gas, Scientifically Prepared Solvents
¶ The twentieth century system of acetylene storage. ¶ Full lighting hour service by weight of actual gas, not merely gauge pressure. ¶ Refilling stations being erected in the principal cities.
WRITE FOR DETAILED INFORMATION
The Searchlight Gas Company, Factory Warren, Ohio
General Office, Pittsburg, Pa.



It is Easier to Sell the Proved Shaft Drive

The Waverley has proved beyond all question the silence, the economy, the service, the safety of its Shaft Drive over any other form of drive.

It is the drive of the present and the future for all electrics. No one, after intelligently comparing the Silent Waverley with others, can ever again reconcile himself to dirty, noisy, exposed chains that throw oil over the body of the carriage, and the clothes of the occupants—chains that come off—chains that clog up with mud and grime—chains that have to be boiled and soaked in gasoline before every oiling.

The Silent Waverley High Efficiency Shaft Drive (Pat. applied for)

is leading the way. It is the only Electric Shaft Drive five years past the experimental stage. It is the only electric shaft drive in its third year of proved efficiency in actual service in rain, mud and snow. You don't have to take our word for it. It has the owner's test. Ask the Waverley owners.

Here's more Silent Waverley Efficiency:

Waverley herringbone gears, giving an efficiency of 90% per cent and saving power cost—The Waverley big silent motor suspended from the body away to the rear with rubber cushions to deaden all noise—the Simple Waverley No-Arc Controller—absolutely safe—with no possibility of fusing. "Now that's the way to build a controller," said Thomas Edison, himself a Waverley owner.

Only 7 replacements were called for in the entire Waverley driving mechanism for eighteen months.

Equally successful are the Silent Waverley ambulances and hearses for hospitals, dispensaries, undertakers, etc. These commercial vehicles and hospital outfits are coming into more common use everywhere, and mean growing paying business to our representatives.

Send for Handsome New Art Catalog of Waverley 1911 Models. Free on request.

The Waverley Co.

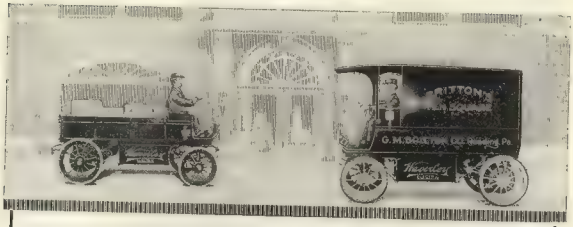
182 S. East St., Indianapolis, Ind.

The Silent **Waverley** *High Efficiency Shaft Drive*

The Silent Waverley is the only electric specially designed to give equal satisfaction with solid or pneumatic tires. The purchaser has his choice.

Exide, National, Waverley or Edison battery, as desired.

The agent who handles the Silent Waverley has an all-the-year-round business. Besides the Silent Waverley Coupe, Brougham, Stanhope, Victoria-Phaeton and Roadster he can offer Waverley vehicles for Commercial purposes, from the light delivery wagon to the heavy truck.



Let Us Prove the Value of Waverley Motor Trucks to You

If your business involves the use of delivery wagons averaging daily runs of from ten to fifty miles, write us today.

Tell us enough about your delivery conditions to enable us to answer intelligently.

If you CAN use a motor truck, we will give you detailed facts and figures showing cost, maintenance and saving over horse deliveries.

Waverley
ELECTRIC
MOTOR TRUCKS

A Maintenance Contract

The figures we give you as to the cost of running a Waverley truck will not be estimates which you may or may not be able to duplicate.

They will represent the figure at which our local representative will contract to maintain the car. These maintenance contracts are already in operation in Indianapolis, and arrangements have been made with dealers in many places to furnish them.

So there's no uncertainty about the matter. Take our figures item by item. Compare them with your present costs. Figure the saving for yourself. Then use your own judgment.

Many Waverleys in Use

We can refer you to numbers of delighted users of Waverley Trucks.

We can supplement our estimate of the saving with their actual figures.

But what you most want to know is just how you're going to come out—and that's what our figures, WITH THE CONTRACT, will tell you.

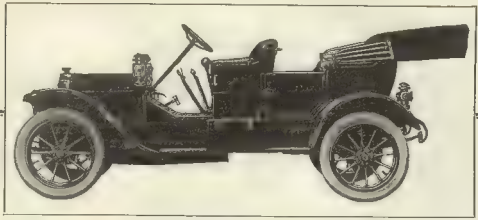
We make the Waverley in styles and bodies to suit any business.

Write now.

To the Dealer: The value of Waverley Electric Motor Trucks in YOUR business can only be understood when you have received and read a full explanation of our maintenance contract and selling plan. Write at once for particulars.

WE ARE NOW DELIVERING STRICTLY 1911 MODELS

183 S. East Street **THE WAVERLEY COMPANY** Indianapolis, Ind.



NINETEEN-ELEVEN WHITE PLEASURE CARS

White Gasoline Cars In announcing our 1911 product in gasoline-driven cars we point with pride to the success of our long stroke engine—the economy in operation it has so well demonstrated that it may be called to-day the standard type of motor for efficiency and reliability. It is a moderate powered car—at a moderate price—with a moderate up-keep.

White Steam Cars Through all the years of automobile designing, one car has stood out preeminently for reliability. Whenever an owner wished to go where no one had been before whenever an owner needed to be sure of his machine be sure it would start, go and come back—he wanted a swift, silent and sure White Steamer.

Steam is the reliable motive power of the world; we know more about it, have operated it longer, it operates more easily, and nothing has ever yet been found to take its place. It has greater reserve and greater possibilities—it has more flexibility.

White Cars Well Built If you could go through our factory to see just how carefully each part of our cars is built, there would be no question as to the ones you would buy. In the presence of the countless operations and refinement of processes even a tyro knows that it means "well built."

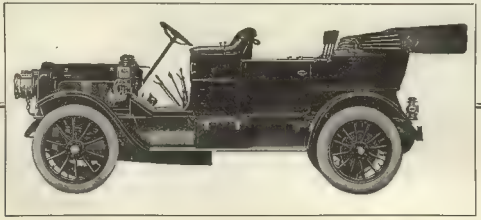
We have left no stone unturned to accomplish the highest results. The performance of hundreds of cars in operation is sure proof that we are right. The evidence is before him of the eternal vigilance we exert to make our cars as good as modern science will permit.

Catalogues, testimonials and other literature gladly sent upon request.

Branches or agencies in all large cities.

THE WHITE COMPANY

860 EAST SEVENTY-NINTH STREET CLEVELAND



Clincher Bicycle and Motorcycle **TIRES** For Single and Double Clinch Rims

Rubber Gas Bags Tubing

Lamp Connections Tire Patches and Tape

INDIANA RUBBER AND INSULATED WIRE COMPANY
JONESBORO :: :: :: :: INDIANA

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PUB. BY MOTORCYCLE EQUIPMENT CO HAMMONDSPORT NY

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Reliance Motorcycle Co.
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In Natural Colors. Made to order to suit your requirements. Make good advertisements, at reasonable prices. Send us pieces of your printed matter, but ask for samples and prices.
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AUTO GOODS
Motorcycle Supplies
We want every dealer to have our Catalogue and Bargain Books. Please write us on your letter head for No. 44X.
NEW YORK SPORTING GOODS CO.
15 and 17 Warren St., New York

Can't tell anything about our Motorcycle here, but will send Catalog that will.
Harley-Davidson Motor Co.
MILWAUKEE, WIS.

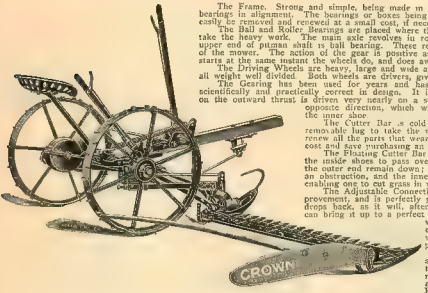
1910 Bicycle and Motorcycle Catalog NOW READY
Auto Catalog Ready April 15th
SIDNEY B. ROBY CO.
ROCHESTER, N. Y.

Minneapolis TWO-SPEED MOTORCYCLES
FRICTION CLUTCH IN MOTOR
Write for Catalog
Minneapolis Motorcycle Co., Minneapolis, Minn.

MOTORCYCLE SUPPLIES
Large 1910 Catalogue ready March 15th, 1910. Indian and Excelsior Motorcycles. Second-hand Motorcycles, $40 up.
F. B. Widmayer Co., 2312 Broadway, N. Y. City

SPROCKETS
for Bicycle and Motorcycle
WE MAKE 90 PER CENT OF THE SPROCKETS USED
THE PARISH & BINGHAM CO.
Cleveland, Ohio

The Thomas Crown Mower



The Frame. Strong and simple, being made in one piece, it holds securely all bearings in alignment. The bearings or boxes being independent of the frame, can easily be removed and renewed at a small cost, if needed.

The Ball and Roller Bearings are placed where there is the most friction and to take the heavy work. The main axle revolves in roller bearings. The Bearing at upper end of pitman shaft is ball bearing. These reduce draft and add to the life of the mower. The action of the gear is positive and instantaneous and the knife starts at the same instant the wheels do, and does away with all dead center points.

The Driving Wheels are heavy, large and wide apart, clear the swath and carry all weight well divided. Both wheels are drivers, giving ample traction.

The Gearing has been used for years and has proven by many years trial, scientifically and practically correct in design. It is so arranged that the pitman on the outward thrust is driven very nearly on a straight line, in place of in the opposite direction, which will cause the knife to bind in the inner shoe.

The Cutter Bar is cold rolled steel each guard has a removable lug to take the wear and it is thus possible to renew all the parts that wear on a bar, at a small additional cost and save purchasing an entire new bar.

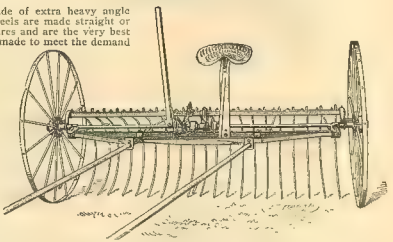
The Floating Cutter Bar with the new gag lever, enables the inside shoes to pass over a very high obstruction, and the outer end remain down; also the outer end to pass over an obstruction, and the inner end to remain down, thereby enabling one to cut grass in very rough ground.

The Adjustable Connecting Bar is a very valuable improvement, and is perfectly practical. When the cutter bar drops back, as it will, after the joints become worn, you can bring it up to a perfect alignment of pitman and knife, which, of course, makes the machine run lighter, do better work, and prevents breaking of pitman and knives.

The Improved Foot Lift and Raising Lever. In raising the cutter bar, the outer end raises faster than the inner end, and the long leverage given the Foot Lever enables the operator to handle the long cutter bar as easily as a shorter one. The raising lever is independent, and separate, while you are operating the foot lever, but can be operated with the foot lever, if desired.

The Thomas Crown Mower.										Complete.
4½-foot Cut.	Single Speed.	Weight, 719 pounds	$ 75 00
" " " "	5	" "	" "	" "	728	"	80.00
" " " "	6	" "	" "	" "	789	"	90.00
" " " "	7	" "	" "	" "	807	"	100.00
" " " "	4½	" "	Changeable Speed.	Weight, 752 pounds	80 00
" " " "	5	" "	" "	" "	761	"	85.00

The Thomas Steel Dump Rake



The frame and head are made of extra heavy angle steel, each in one piece. The wheels are made straight or stagger spokes and channel out tires and are the very best metal wheels made. This rake is made to meet the demand for a strong steel self-dumping rake, that will not break teeth. A first-class steel tooth, with a coil in it, near where it is fastened in the head. Each tooth is fastened in the rake head securely and independently by a separate malleable fastening. There is a slot in the tooth fastening, and it makes the teeth perfectly loose and independent. They thus adapt themselves to uneven, rocky and rough ground. No weight on horses' neck or back. Each tooth gets in use the full benefit of the tooth, and these teeth don't break. The "Steel Reliable" Rake has a hand lever for raising the teeth by hand, when you do not want to use the self-dumping device. It dumps very easily by hand. Teeth do not fall back hard, as on other rakes, jarring and straining the rake.

Wheels are alike—no rights or lefts. Stationary hand lever. Continuous and heavy steel axle. Center dumping cog wheel, enclosed. Ratchet, pawl and spring in both hubs.

											Complete
No. 1—The Steel Reliable.	8	feet.	30 or 35	Teeth.	Wt., 335 pounds.	Straight or Staggered Spokes	$35.00
No. 2—	"	"	"	9	"	33 or 36	"	"	350	"	"	"	"	"	40.00
No. 3—	"	"	"	10½	"	36 or 33	"	"	390	"	"	"	"	"	45.00
No. 4—	"	"	"	12	"	30 or 37	"	"	425	"	"	"	"	"	50.00

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

SOUTHERN HARDWARE & SUPPLY CO., MOBILE, ALABAMA

The Gantt Cotton Planters and Distributors

Gantt Cotton Planter.

Force Feed, strongly made, steel beams, adjustable colters, and best steel springs, will plant from a peck to four bushels per acre. They are used in all the cotton growing States, and acknowledged to be the best Cotton Planter made

Each.

Gantt Cotton Planter. Force Feed. Weight, 65 pounds.. .. .. $6.00

Gantt Guano Distributor.

Strongest, most perfect made. Far superior to anything on the market. Unsurpassed for putting out all kinds of guano; easily regulated to distribute the proper amount; no waste in turning rows.

Each.

No. 1—Gantt Guano Distributor. Rotary Feed. Weight, 60 pounds..... $6.00

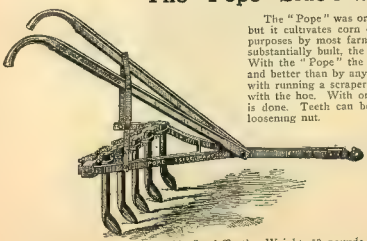
Gantt Guano Distributor.

Strongly made and has more good points about it than other machines of its kind on the market. Has neither chain nor sprocket wheels, but knocks or jars the fertilizer out of the hopper into a spout which conveys it to the ground and spreads it in furrow made by the opening plow.

Each

No. 3—Gantt Guano Distributor. Oscillating Feed. Weight, 60 pounds..... $6.00

The "Pope" Side Harrows



The "Pope" was originally planned for cotton cultivation, but it cultivates corn equally as well, and is used for both purposes by most farmers and planters. It is strongly and substantially built, the teeth and frame being made of steel. With the "Pope" the farmer can cultivate his crop quicker and better than by any other method. It does away entirely with running a scraper around the plants, and then scraping with the hoe. With one sweep of the side harrow the work is done. Teeth can be adjusted to any position by simply loosening nut.

These harrows have a bar 22 inches long, with wrought iron braces and frame 1½ x ¾ inch, 1 inch adjustable steel teeth, with wrench fitting all nuts. Can be adjusted for either side or straight harrow.

Each

"Pope" Side Harrow. Adjustable Steel Teeth. Weight, 53 pounds $4.00

THE TOWER ONE-MAN 2-SAW TRIMMER

FIG. 5717

For mills cutting up to 30,000 feet in ten hours. Saws, 18 in. in diameter. Shipping weight, 2,000 pounds. Made in five sizes, as follows:

No. 16, trimming from 6 to 16 ft., both lengths inclusive; No. 18, trimming from 6 to 18 ft.; No. 20, trimming from 6 to 20 ft.; No. 22, trimming from 6 to 22 ft.; No. 24, trimming from 6 to 24 ft.

For mills cutting up to 50,000 feet in ten hours. Saws, 22 in. in diameter. Built of iron and steel throughout. Shipping weight, 3,500 pounds. Also made in five sizes, as follows:

No. 616, trimming from 6 to 16 ft., both lengths inclusive; No. 618, trimming from 6 to 18 ft.; No. 620, trimming from 6 to 20 ft.; No. 622, trimming from 6 to 22 ft.; No. 624, trimming from 6 to 24 ft.

All ten of these trimmers, viz., the Nos. 16, 18, 20, 22, 24, 616, 618, 620, 622 and 624, are provided with two feeds, which may be instantly started, stopped or changed without stopping the saws, one lever controlling both feeds.

In all ten of these trimmers the manner of adjusting the saws saves time, steps and lumber. The crank for shifting the saws is carried by one of the transfer blocks instead of being at one end of the machine, as is customary. This construction has two distinct advantages over the ordinary arrangement. They are:

A. There is a great saving of time and labor, especially with short boards. With other trimmers it is necessary to go to the end of the *machine* every time the saws are shifted. With this trimmer it is never necessary to go beyond the end of the *board*. The result is a great saving in the number of steps taken, and a considerable increase in the quantity of work done.

B. With these machines, the operator, traveling, as he does, with one of the transfer blocks, is in a position to see instantly how to trim a board to the best possible advantage, which he could not do from the end of the trimmer. This often means a saving of lumber by reducing waste.

REMEMBER

1. That trimmed lumber looks better and commands a higher price than untrimmed.

2. That a trimmer also saves freight by removing waste. Thus it very soon pays for itself.

Prices on application.

KNIGHT'S IDEAL SAWMILL DOGS

SINGLE.

FIG. 5718.

DUPLEX.

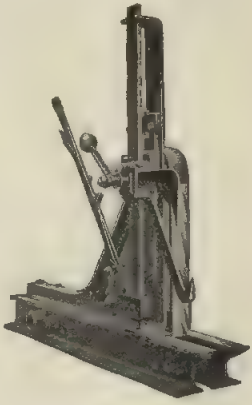


FIG. 5719

Knight's Ideal Sawmill Dogs are too well known among mill men to require a detail description of their operation. We wish, however, to call your attention to the improved locking mechanism on the Single Dog, an arrangement by which the dog bit is locked at any point as it is forced into the timber. This device is controlled by the power lever and is entirely automatic

The Knight's Ideal Duplex Dog resembles in design the Single Dog, differing only in that it catches the log from above and below. The lower dog, located between the guide and side bars, is entirely automatic, no adjustment being necessary to bring it into position to hold either a log or cant. It is controlled by the power lever, and by requiring no extra movement to operate, can be handled with the same speed as the Single Dog, thus making it the best general purpose dog there is on the market.

These machines are built in five sizes, as follows:

Number.	Mills Used On.	Height.	Size Guide Bar.	Size Slide Bar.	Size Dog Bit.	Slide Heads.	Weight. Single.	Weight. Duplex
No 1 . . .	Pony.....	36"	2" x ½"	2" x 5/8"	1½" x ⅛"	Cast.	80 lbs.	90 lbs
No 2 .	Medium.....	41"	2½" x ½"	2½ x ⅝"	2" x ½"	Cast.	95 lbs.	110 lbs
No 3 .	Heavy	45"	4" x ⅝"	3" x ½"	2¼" x ½"	Cast.	115 lbs.	125 lbs.
No. 3 Special	Heavy Steam Feed	49"	4" x ⅝"	3" x ⅝"	2½" x ½"	Forged Steel.	135 lbs.	150 lbs.
No 4	Extra Heavy . . .	51"	5" x ⅞"	3½" x ¾"	2½" x ¾"	Forged Steel.	175 lbs.	235 lbs.

Machines illustrated are Left Hand.

SAVINGS BANKS

"HOUSEHOLD"

Heavy Steel. Antique Copper Finish. Unlocked with a Key.

"Household" .....Per dozen $9.00

DIME REGISTER

Heavy Cold Rolled Steel. Black Japanned. Has no Key. Locks and Unlocks automatically. Can be opened only when 100 Dimes are deposited. Has Registering Lever and Alarm Bell.

Dime Register Holds 100 Dimes.....Per dozen $9.00

"UNCLE SAM'S" NICKEL

Heavy Cold Rolled Steel. Black Japanned. Has no Key Locks and Unlocks automatically. Can be opened only when 100 Nickels are deposited. Has Registering Lever and Alarm Bell.

"Uncle Sam's" Nickel Holds 100 Nickels,
Per dozen $12.00

"UNCLE SAM'S" DIME

Heavy Cold Rolled Steel. Black Japanned. Has no Key. Locks and Unlocks automatically. Can be opened only when 200 Dimes are deposited. Has Registering Lever and Alarm Bell.

"Uncle Sam's" Dime Holds 200 Dimes,
Per dozen $12.00

All the above, one in a Box.

CONCRETE MIXERS

IMPROVED UNITED CONCRETE MIXERS

1908 MODEL—CHARGING SIDE

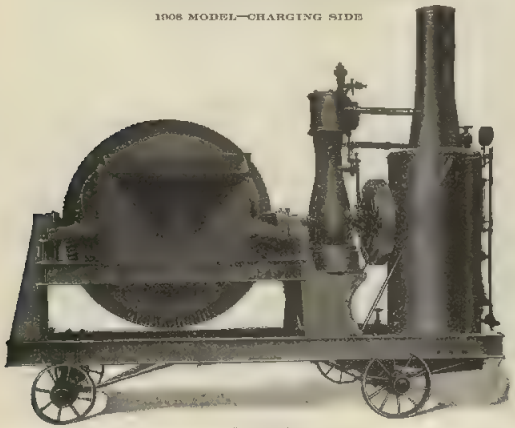


FIG. 5073.

Number	10	20	30
Capacity per batch, dry materials ....cubic feet	10	20	30
" " " mixed " "	7	14	21
" " hour, " " ....yards	10	20	30
" bags of cement with standard proportions of rock and sand	1	2 to 3	3 to 4
Speed of drum....revolutions per minute	20	19	18
" " shaft.... " " "	230	220	210
Horse-power furnished, steam engine	4	6	8
" " " boiler	6	8	10
" " gasoline engine	4	7	10
Weight of Mixer on skids....pounds	2400	3600	4800
" " " " trucks	3000	4200	5500
" " " " with steam engine and boiler	5400	7200	9500
" " Mixer on trucks with gasoline engine "	1000	5700	8000
Price on skids, with pulley of gear....each	$375.00	$575.00	$775 00
" " " " steam engine connected "	535.00	735 00	935.00
" " " " " and boiler "	615.00	815 00	1015 00
" " trucks " " " "	585 00	785 00	985.00
" " " " " and boiler "	665 00	865 00	1065 00
" " skids " gasoline engine "	535.00	735.00	935 00
" " trucks " " " "	585.00	785 00	985.00
" Friction Clutch for Engine "	25 00	25 00	25.00
" Elevating and Charging Hopper "	200. 00	275 00	325 00

Capacities of United Mixers are guaranteed as specified above.

CHICAGO CONCRETE BLOCK MACHINES

EVERY PART INTERCHANGEABLE

MACHINES FOR SPECIAL DESIGNS MADE TO ORDER

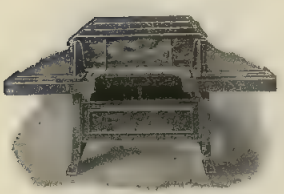


FIG. 5071.

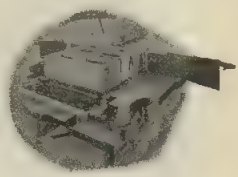


FIG. 5072.

PRICES ON SPECIAL EQUIPMENT FOR THE NO. 4 CHICAGO MACHINE 1909 MODEL

We can furnish the No. 4 Chicago Machine, 1909 Model, with Equipment for making two blocks at a mould, 8, 10 or 12 inches wide with equipment for making rock face and plain face blocks all complete for..... $187.50

Machines for making one block at a mould with equipment for making rock and plain face blocks, 8, 10, 12, 14, 16 or 18 inches wide, price..... $167.50

Extra Face design, standard..... 6.00

" End " " 3.75

For $17.50 we will furnish our Patent Facing device for facing blocks. With this device we guarantee a block can be faced as well and as quick as on a face down machine; if facing device is wanted, it should be ordered with the machine, as the device must be fitted to machine. With the facing device, the Chicago has no equal as a face-down machine.

For $27.50 we will furnish equipment for making 8⅛x16 inch standard blocks, 4 blocks at one time. Two 16 inch blocks on a 32 inch pallet with this outfit. The No. 4 Chicago has no equal as a 16 inch machine.

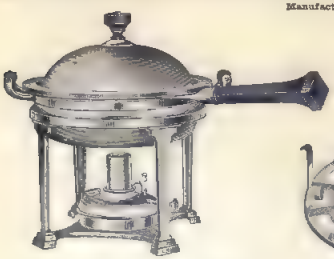
We can also furnish equipment for making 8⅛x24 inch blocks at any time ordered, to work on the No. 4 Chicago

"Universal" Chafing Dishes

Legs, Base and Handle Sockets are of cast brass. **Inside**s of Food and Water Pans are heavily coated with pure tin. **Non-heating Ebonwood Handles** in natural finish.

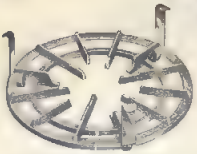
In every detail of design and construction the "Universal" embodies in copper the distinction of the finest sterling. More than that, it has a stove that makes it as easy to cook in as on a gas range.

Manufactured by Landers, Frary & Clark.



Capacity 3 Pints
Equipped with "Universal" Hot Blow-Flame Alcohol Stove

No. 800C	Copper	Each $[illegible]
No. 800N	Nickel plated	Each 26.40
No. 800S	Silver plated	Each 38.00

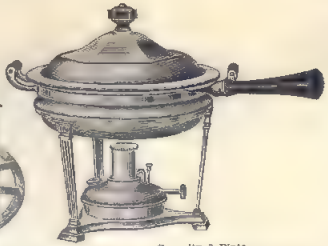


CHAFING DISH GRATE.

May be suspended in the stand of any 'Universal' Chafing Dish after the food and hot water pans are removed.

In connection with the 'Universal' Chafing Dish Lamp this Grate provides a most convenient apparatus for boiling, stewing, frying or broiling.

No. 1 Dull Nickel.. .. .. .. Each $1 10



Capacity 3 Pints
Equipped with "Universal" Hot Blow-Flame Alcohol Stove

No. 740C	Copper	Each $[illegible]
No. 740N	Nickel plated	Each 24 00
No. 740S	Silver plate	Each 32 70

Capacity 3 Pints
Equipped with "Universal" Hot Blow Flame Alcohol Stove

No. 700C	Copper	Each $23.70
No. 700N	Nickel plated	Each 23.70
No. 700S	Silver plated	Each 32.80

"UNIVERSAL" CHAFING DISH SPOON AND FORK.

No. 400 Silver plated fork and spoon. Non-heating, ebonized wood handles. Total length, 11⅞ inches .. .. Each $3 90

We carry in stock, however, numbers to match all patterns of Chafing Dishes and prices are .. .. Each $3 90

Capacity 3 Pints
Equipped with "Universal" Hot Blow Flame Alcohol Stove

No. 600C	Copper	Each $20 80
No. 600N	Nickel plated	Each 20.80
No. 600S	Silver plated	Each 30.20

Capacity 3 Pints.
Equipped with "Universal" Hot Blow-Flame Alcohol Stove

No. 800C	Copper	Each $18.75
No. 800N	Nickel plated	Each 18.75
No. 800S	Silver plated	Each 28.10

CHAFING DISH TRAYS ONLY.

Made of heavy gauge solid copper, satin [illegible] polished border

12-inch Round Trays.

No. 712C	Copper	Each $3 20
No. 712N	Nickel plated	Each 3 20
No. 12S	Silver plated	Each 4 00

14 inch Round Trays.

No. 14S	Silver plated	Each $[illegible]
No. 14C	Copper	Each $3 50
No. 14N	Nickel plated	Each 3 50

Capacity 3 Pints
Equipped with "Universal" Hot Blow-Flame Alcohol Stove

No. 400C	Copper	Each $22 00
No. 400N	Nickel plated	Each 22 00
No. 400S	Silver plate	Each 31 [illegible]

We Fill All Orders Promptly

Our One Aim is to PLEASE

"UNIVERSAL" ALCOHOL GAS STOVE CHAFING DISHES

Insure the rapid and thorough cooking of a substantial meal. Is safe, efficient and easily operated as an ordinary gas range, is artistic in design, superb in finish and solidly built for service. Stove made of brass heavily nickel plated to match chafing dishes. Handles and knobs of non-heating Ebonwood in natural finish and Genuine Buck Horn.

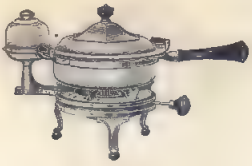
Manufactured by Landers, Frary & Clark

No. 861

Stove and Dish Nickel Plated and Highly Polished. Complete, $24.00

No. 860.

Stove and Dish Nickel Plated and Highly Polished Complete $28.00

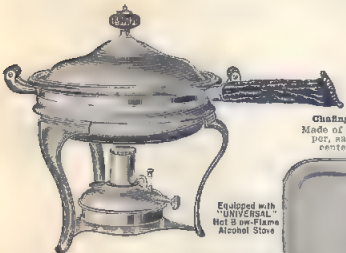


No. 460.

Stove and Dish Nickel Plated and Highly Polished. Complete, $28.80

"Universal" Chafing Dishes with Extra Fine Selected Genuine Buck Horn Handles

Capacity Three Pints



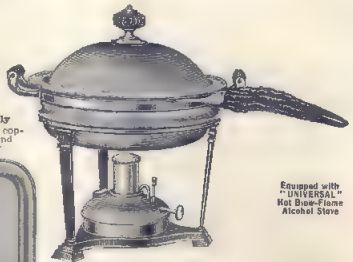
Equipped with "UNIVERSAL" Hot Blow-Flame Alcohol Stove

No. 0602C Copper .....Each 27 35
No. 0602N Nickel plated .....Each $27 35
No. 0602S Silver plated .....Each 36 20

Chafing Dish Trays Only

Made of heavy gauge solid copper, satin finished back and center, polished border

No. 114N 10x14-in. tray nickel plated, each $a 35
No. 114C 10x14-in. tray copper, each ... 5 36
No. 114S 10x14-in. tray silver plated, each .. 8 8



Equipped with "UNIVERSAL" Hot Blow-Flame Alcohol Stove

No. 0701C Copper ... Each 28 55
No. 0701N Nickel plated Each 28.55
No. 0701S Silver plated . Each 38 00

Equipped with "UNIVERSAL" Hot Blow-Flame Alcohol Stove

Four Piece Set.

Consisting of Chafing Dish, Fork and Spoon and 14 inch Round Tray. Handles and knobs of beautifully marked stag. Spoons and forks always silver plated

No. 0802-4C	Copper .	Complete Set $42.10
No. 0802-4N	Nickel plated	Complete Set 42.10
No. 0802-4S	Silver plated	Complete Set 55.90
No. 0803C	Copper ..	Dish Only 26.40
No. 0803N	Nickel plated ..	Dish Only 26.40
No. 0803S	Silver plated	Dish Only 36.80

14 Inch Round Trays.

No. 14C	Copper .	Each $3.90
No. 14N	Nickel plated.....	Each 3 90
No. 14S	Silver Plated .	Each 7 10
No. 3 Chafing Dish Fork and Spoon.....		Each $6.40

CHAFING DISH FORKS AND SPOONS.

No. 1.

Chafing Dish Fork and Spoon, Each, $5 60

Equipped with "UNIVERSAL" Hot Blow-Flame Alcohol Stove

Four Piece Set.

Consisting of Chafing Dish, Fork and Spoon and 14-inch Round Tray. Handles and knobs of beautifully marked stag. Sterling silver caps. Spoons and forks always silver plated

No. 0903-4C	Copper	Complete Set $51 10
No. 0903-4N	Nickel plated	Complete Set 51.10
No. 0903-4S	Silver plated	Complete Set 63.90
No. 0903C	Copper	Dish Only 32.30
No. 0903N	Nickel plated ..	Dish Only 32.30
No. 0903S	Silver plated	Dish Only 42.40

14 Inch Round Trays.

No. 14C	Copper .	Each $3.90
No. 14N	Nickel plated...	Each 3.90
No. 14S	Silver Plated.	Each 7.10
No. 3 Chafing Dish Fork and Spoon..		Each $7 20

Universal Table Kettles

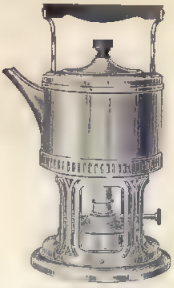
New, Handsome and Artistic Designs

Ebonized handles and knobs. Lamp, stand and handle brackets made of brass. Body of kettles made of solid copper

Each kettle is equipped with a patented "UNIVERSAL" alcohol lamp which burns with a hot flame and is easily regulated.

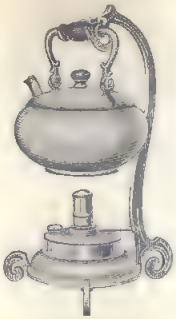
Capacity 2½ pints

No. 545	Nickel plated	$1.80
No. 549	Copper	1.80
No. 545	Silver plated	3.00



Capacity 2½ pints

No. 552	Nickel plated	$14.80
No. [illegible]	Copper	4.80
No. 552	Silver plated	8.40



Capacity 3 pints

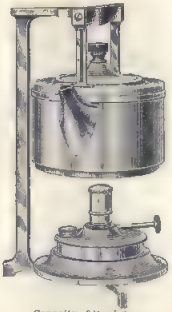
No. 53	Nickel plated	$2.80
No. 53	Copper	4.80
No. 53	Silver plated	7.00

Capacity, 3 pints

No. 521	Nickel plated	$ 6.80
No. 521	Copper	9.80
No. 521	Silver plated	20.00

Capacity 2½ pints

No. 554	Nickel plated	$ 8.80
No. 554	Copper	13.80
No. 554	Silver plated	25.00



Capacity, 2½ pints

No. 532	Nickel plated	$ 8.80
No. 532	Copper	13.80
No. 532	Silver plate.	25.00

Capacity, 3 pints.

No. 511	Nickel plated	$12.80
No. 511	Copper	22.80
No. 511	Silver plated	36.00

Capacity 2¼ pints

No. 571	Nickel plated	$16.40
No. [illegible]	Copper	26.40
No. 571	Silver plated	39.60

Experience has perfected our product, established our standard, and made our reputation our guarantee.

"Universal" Samovars and Sets, "Universal" Tea Ball Tea Pots and the "Universal" Coffee Percolators

Manufactured by Landers, Frary & Clark.

The "Universal" Samovar

For afternoon Teas! Or tea at any time. A stove that boils the water in seven minutes.

A Tea Ball suspended through the cover—lowered into the water as soon as it boils—raised out of it after one or two minutes and then suspended out of the way inside the cover.

A faucet to pour from.

The last cup the same as the first. Every cup perfect tea.

Made of Copper.
Ebonwood Handles and Knob.
Capacity Three Pints or Six Cups.

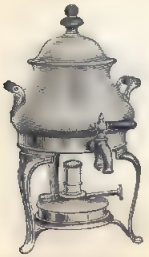
No. 606C	Polished Copper ...	Each	$1 [illegible]
No. 606N	Nickel plated	Each	17 [illegible]
No. 606S	Silver plated	Each	20 60

Tea Ball Tea Pot

Made of Copper. Non-heating Handles.
Capacity Three Pints or Six Cups.

No. 306C	Polished Copper	Each	$10 85
No. 306N	Nickel plated	Each	12 95
No. 306S	Silver plated	Each	12 [illegible]

"Universal" Samovar



Made of Copper.
Furnished in Nickel Plate only
Ebonwood Handles and Knobs.
Capacity Three Pints or Six Cups.

No. 606S	Nickel plated	Each	$13 90

"Universal" Samovar Set

Prices for complete 6 piece "Universal" Samovar sets. Tray is 12x18 inches. Has End Handles. Polished Border and Satin Center.
Capacity Three Pints or Six Cups.

No. 606C	Copper	Per set	$51 65
No. 606N	Nickel plated	Per set	61 85
No. 606 9S	Silver plated	Per set	75 80

Four and Six-Piece Coffee Machine Sets

Prices for complete 4 piece sets. Tray is 12x18 inches Polished Border and Satin Center

			Per set
No.	4064C	Copper . .	with 3 pint machine $35 55
No.	4064N	Nickel plated	with 3 pint machine 48 55
No.	4064S	Silver plated	with 3 pint machine 48 60
No.	4094C	Copper . . .	with 4 pint machine 40 55
No.	4094N	Nickel plated	with 4 pint machine 46 85
No.	4094S	Silver plated . .	with 4 pint machine [illegible]

Prices for complete 6 piece sets. Tray is 12x18 inches Has end handles. Polished border and satin center.

			Per set
No.	5066N	Nickel plated .	with 3 pint machine $59 80
No.	5066S	Silver plated.	with 3 pint machine 74 40
No.	5096N	Nickel plated	with 4 pint machine 61 80
No.	5096S	Silver plated .	with 4 pint machine 77 75

The "Universal" Tea Ball Tea Pot

Every woman knows Tea leaves should not steep too long, that Tea Balls are drippy and inconvenient.

In the "Universal" the Tea Ball remains in the Pot, and when the tea has steeped enough is raised from the water and suspended above it, inside the cover.

The last cup is just the strength of the first and every cup Perfect Tea.

Made of Copper. Non-heating Handles.
Capacity Three Pints or Six Cups.

No.	106C	Polished Copper	Each $10 85
No.	106N	Nickel plated	Each 12 95
No.	106S	Silver plated	Each 12 70

The "Universal" Individual Tea Ball Tea Pot

Made of Copper. Non-heating Handles.
Capacity Two Cups.

No.	101C	Polished Copper	Each $ 8 70
No.	101N	Nickel plated...	Each 8 70
No.	101S	Silver plated..	Each 10 00

Coffee Percolator

Capacity Three Pints or Six Cups.

No.	666C	Copper	Each $13 90
No.	666N	Nickel plated . .	Each 13 90
No.	666S	Silver plated ...	Each 15 80

Capacity Four Pints or Nine Cups.

No.	669C	Copper	Each $15 90
No.	869N	Nickel plated ...	Each 15 60
No.	669S	Silver plated	Each 18 40

No Matter What You Want We Can Furnish it at Lowest Prices

"Universal" Denatured Alcohol Gas Stoves (Wickless Burners)

For Kitchen, for Boats, for Dining Room, Den or Side Board

Denatured alcohol is clean, odorless and inexpensive. In these stoves it is converted into a gas and burns with an intensely hot blue flame. The burners are made of cast brass. The generator is made of straight, seamless brass tubing. Inside of this is a patented filler cartridge, made of a cluster of brass wires, which regulates the flow of alcohol. Nothing to wear out or replace. Safe, efficient and reliable.

For Dining Room, Den, Sideboard or Boat

Manufactured by Landers, Frary & Clark.

Made entirely of brass. Heavy nickel plated and polished.

At 50 cents per gallon Denatured Alcohol is cheaper than coal at $6 00 per ton.

Diameter, 8¾ inches.
Total height, 10½ inches.
Capacity of Fount, 1 pint.

No. 600N ..... Each $13.70

Made entirely of brass heavily nickel plated and polished.

With railing to prevent cooking vessels from sliding off.

Diameter, 8¾ inches.
Total height, 10½ inches.
Capacity of Fount, 1 pint.

No. 1000 ..... Each $15 75

Burner made of brass and body of steel. Dull finish nickel plate throughout.

Diameter, 8¾ inches.
Total height 9¾ inches.
Capacity of Fount. 1 pint.

No. 610 ..... Each $8 00

"UNIVERSAL" ALCOHOL STOVES.
(Wick feed.)

These two models burn with the famous blow-flame—blue and intensely hot. They boil a quart of water at 50 degrees Fahrenheit in less than six minutes These stoves burn denatured alcohol gas self generated. Easy to light, easy to regulate. Both patterns are equipped with wind shield to permit their use out of doors

FOR KITCHEN, SUMMER COTTAGE OR CAMP.

The burner and tank of brass stoves are of brass These and the grate are finished in dull nickel plate The frames are substantially made of japanned sheet steel, and protect the flames from currents of air Will accommodate ordinary cooking utensils and regular gas stove ovens

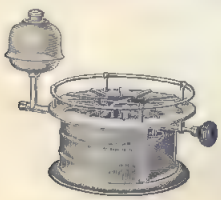
No. 10 Single Burner.
Diameter of grate, 10⅝ inches.
Height, 5 inches.
Extreme height, 10⅝ inches.
Capacity of Fount, 1 pint.
Each $8.90

No. 20 Double Burner
Length, 21½ inches Breadth 13⅝ inches
Height, 6¼ inches.
Extreme height 13⅝ inches.
Capacity of tank, 2 quarts
Each $17 75

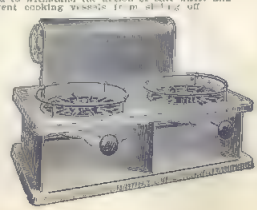
Height 9 inches
Diameter 6¾ inches
No 0N Nickel plated throughout.. .. $4.00
No 0C Copper finish 4 00
Capacity, 1 pint

FOR KITCHEN, SUMMER COTTAGE, CAMP OR BOAT.

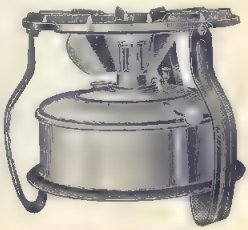
The burners and tanks are made of brass, finished in dull nickel The frames are substantially made of sheet steel, heavily galvanized to withstand the action of salt water and moist air Equipped with brass railing to prevent cooking vessels from sliding off



No. 110 Single Burner.
Diameter of grate, 10⅝ inches
Height, 5 inches
Extreme height 10⅝ inches.
Capacity of Fount, 1 pint.
Each $10.75



No. 120 Double Burner
Length 21½ inches Breadth 13¾ inches
Height, 6¼ inches.
Extreme height, 13⅝ inches.
Capacity of Tank, 2 quarts
Each $21.50

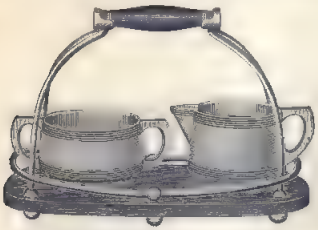


No 1 Height, 7 inches Diameter, 7 inches
Capacity of Tank, 3 pints
Tank made of brass, nickel plated Frame is wrought iron, japanned. Each $6.50

High Grade Quadruple Silver Plated Coffee Sets, Dessert Sets, Tete-a-Tete Sets and Chocolate Pots

No. S-1[illegible] COFFEE SET $32.35
Burnished. Height of coffee pot, [illegible] inches. Capacity, 8 half pints. Creamer gold lined. Height, [illegible] inches. Sugar gold lined. Height, [illegible] inches. Mahogany bottom tray and handle, silver trimmings. Dimensions of tray, 11⅝x8⅝ inches. Height, 11 inches.

No. F-1018 COFFEE SET $23.70
Plain, burnished and embossed. Height of coffee pot, 8 inches. Capacity, 2½ half pints. Sugar gold lined. Height, 4 inches. Creamer gold lined. Height, 4 inches. Diameter of waiter, 11 inches.



No. S-1104 DESSERT SET $18.35
Cream pitcher gold lined. Height, 2⅝ inches. Sugar bowl, height 2 inches. Plain, burnished. Mahogany bottom tray and handle, silver trimmings. Dimensions of tray, 9x5 inches. Height 7½ inches.

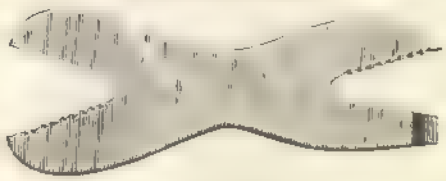
No. S-400 TETE-A-TETE, SET $39.00
Burnished. Height of pot, 6⅝ inches. Capacity, 3 half pints. Creamer gold lined. Height, 3 inches. Sugar bowl, height, 4½ inches. Mahogany bottom tray and handle, silver trimmings. Dimensions of tray, 13x8½ inches. Height, 11 inches.

No. W-185 COFFEE SERVICE ON TRAY $17.35
Burnished thread border. Coffee pot, height 5½ inches. Capacity, 4 after-dinner cups. Sugar, height 3 inches. Capacity, ½ pound. Cream, gold lined, height 3½ inches. Capacity, ½ pint. Tray (royal) pierced gallery mahogany bottom. Length 13 inches. Width 7 inches.

No. W-225 CHOCOLATE POT $6.35
Fluted, burnished. Height, 9¾ inches. Capacity, 3 half pints.

WRENCHES

ALWAYS READY



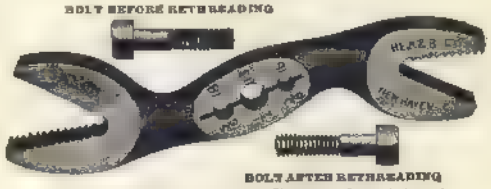
FORSYTH

All Steel. Screw-Driver Point.

No. **825** Black .. Per dozen $2.00
" **805** Nickel Plated " " 3.00

One dozen in a Box.

SAXON



Wrench and Thread Cutter Combined.
Takes Pipe from ¼ to ¾ inch.

No. **738** Black Finish.....Per dozen $6.70

Half dozen in a Box.

BAXTER'S ADJUSTABLE S

Polished.

Size, inches	6	8	10
Per dozen	$9.00	12.00	18.00

Half dozen in a Box

GENERAL PURPOSE WRENCHES

No.	Manufactures Standard Nuts, Size, Ratio, Inches	Openings Finished, Inches	Extreme Length, Inches	Thickness of Heads, Inches	Unfinished, Each	Semi-finished, Each
500	3/16 & 1/4	3/8 & 1/2	6 1/4	7/32	.13	.20
501	1/4 & 5/16	1/2 & 5/8	7 1/8	1/4	.17	.25
502	5/16 & 3/8	5/8 & 3/4	8 1/4	5/16	.22	.33
503	3/8 & 7/16	3/4 & 7/8	9 3/4	3/8	.28	.42
504	7/16 & 1/2	7/8 & 1	10 3/8	7/16	.34	.51

For use in erecting or dismantling plows, carriages, wagons, etc., and for general service where a light and long wrench is desired.

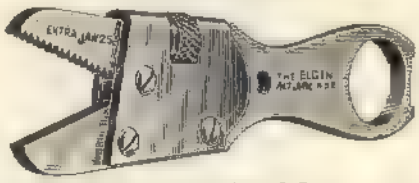
ALWAYS READY

FORGED STEEL

No.	Length, inches.	Holds Square or Round Iron.	Nickel Plated, per dozen.
1	5	¼ to ¾ inch	$5.00
2	7	¼ " 1¼ "	6.75

Half dozen in a Box.

ELGIN ADJUSTABLE

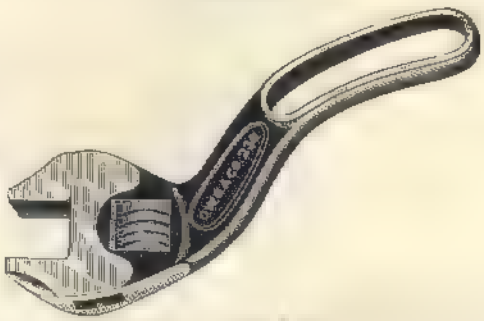


All Steel. Hardened Jaws

7 inch, Nickel Plated .....Per dozen $12.00
Extra Jaws . . . " " 3.00

One dozen in a Box.

ADJUSTABLE S



Hardened Steel Jaws

Size, inches	6	8	10	12	14
No. **230** Per dozen	$7.20	9.00	12.00	15.00	21.00

Half dozen in a Box.

BICYCLE

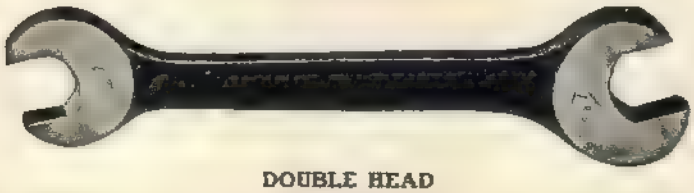
Case Hardened.
Length, 5 inches. Opens 1¼ inches. Weight, 4⅛ oz.

No. **10** Nickel Plated..... Each .22

One in a Box.

WRENCHES

DROP FORGED ENGINEERS'



DOUBLE HEAD

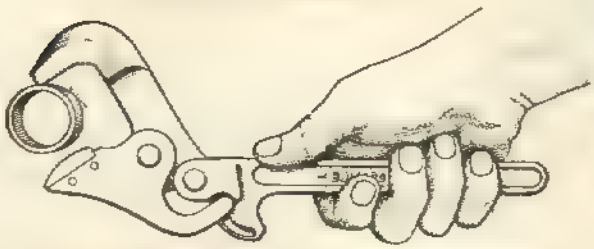
No	22	24	26	27	29	34	36	37	39
Size Bolts, U. S. Standard Nuts	1/8&1/4	3/16&5/16	1/4&3/8	5/16&3/8	3/8&7/16	1/2&5/8	9/16&3/4	5/8&3/4	3/4&7/8
Openings, inches	5/16&1/2	18/32&19/32	1/2&11/16	19/32&11/16	11/16&25/32	7/8&1 1/16	31/32&1 1/4	1 1/16&1 1/4	1 1/4&1 7/16
Extreme Length, inches	4	4 1/8	5 1/8	5 1/8	6 7/8	9 3/4	11 5/8	11 5/8	13 3/8
Unfinished, Each	.14	.17	.20	.21	.25	.41	.50	.53	.65

STILLSON PIPE

Length, inches	6	8	10	14	18	24
Takes Pipe, in.	1/8 to 3/4	1/8 to 3/4	1/8 to 1	1/4 to 1 1/2	3/4 to 2	1/4 to 2 1/2
Each	$2.00	2.00	2.25	3.00	4.00	6.00
Extra Jaws, ea.	.75	.75	.80	1.00	1.33	2.10

6 to 14 inch Wrenches have Wood Handles.
18 and 24 inch, Steel Handles.

BULLARD AUTOMATIC



No.	0	1	2	3	4
Capacity, in	0 to 3/4	1/8 to 1 1/4	3/8 to 1 7/8	1/2 to 2 1/2	3/4 to 3
Pipe Cap., in.	1/8	1	1 1/2	2	2 1/2
Each	.75	1.15	1.35	1 80	2.75
Extra Jaws, ea.		.25	.35	.50	.50
Dozen in Box	1	1	1	1	1/2

TRIMO PIPE

Length, inches	6	8	10	14	18	24
Takes Pipe, in.	1/8 to 2 1/2	1/8 to 3/4	1/8 to 1	1/4 to 1 1/2	1/4 to 2	1/4 to 2 1/2
Each	$2.00	2.00	2.25	3.00	4.00	6 00
Extra Jaws, ea.	.67	.67	.75	1.00	1.33	2.00

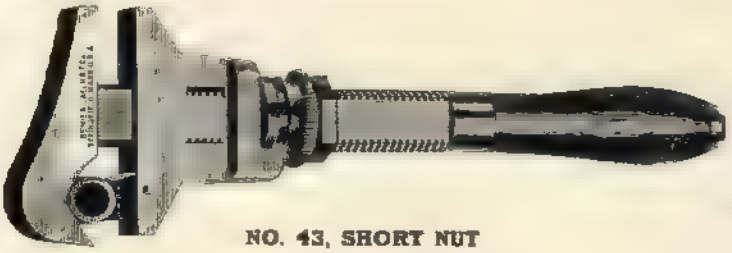
Half dozen in a Box.

BEMIS & CALL COMBINATION PIPE AND NUT

NO. 45, LONG NUT

Size, inches.	For Pipe, inches.	Per dozen
10	1/4 to 1	$25.25
12	1/2 to 1 3/4	28.50
15	1/2 to 2 1/4	40.50

Half dozen in a Box.



NO. 43, SHORT NUT

Size, inches.	For Pipe, inches.	Per dozen.
10	1/4 to 1	$23.00
12	1/2 to 1 3/4	26.00
15	1/2 to 2 1/4	37.00

Half dozen in a Box.

STREET LAMPS

Suitable for use with natural gas mantle or tip burners.

Cottage Post Lamp

FIG. 4198.

Telegraph Pole Bracket Lamp

FIG. 4199.

COTTAGE POST LAMP

Height 2 ft. 7 in. Globe 10¼x11½ in. List price.....each, $8.64

TELEGRAPH POLE BRACKET LAMP

List.....each, $18.40

STREET LAMPS

Suitable for use with natural gas mantle or tip burner.

Cottage Bracket Lamp

FIG. 4200.

Storm Post Lamp

FIG. 4201

COTTAGE BRACKET LAMP

Extends 2 ft. 6 in. Globe 10¼x11½ in.
List price.....each, $10.36

STORM POST LAMP

Copper Top. Height 3 ft. Globe 12x12¾ in.
List price.....each, $13.80

FIG. 4202.

STORM BURNER

Will stand severe storm and not blow out.

List, Burner.....each, $1.84
" Valve..... " .58
" Nipple..... " .12

COUNTER SCALES

THE CLIMAX SCALE

SOLID BRASS BEAM

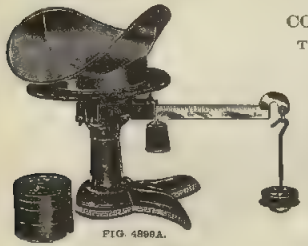


FIG. 4898A.

Weighs up to 25 pounds by the ¼ ounce.

Large tin scoop heavily wired, and solid brass beam.

Bearings all case hardened tool steel.

Enameled in vermilion and decorated in gold.

Each in a wooden case ready for reshipment.

List Price.....each, $4.50

THE VICTOR

Solid brass scoop, solid brass double beams and brass patented sliding poises.

Weighs up to 240 pounds by the ½ ounce.

Platform 10½x13¾ inches.

Bearings all case hardened tool steel. Steel levers.

Enameled in vermilion and decorated in gold.

Accuracy and durability guaranteed.

Each in a wooden case ready for reshipment.

List Price,....each $8.00

FIG. 4899B.

AUTOMATIC SCALES

FAMILY OR COUNTER

Dials are set at an angle which places them so nearly before the eyes, and, therefore can be read at a glance without stooping. Regulating device is placed inside of frame and is supplied with a lock nut which prevents its being jarred or shaken loose. Absolutely accurate.

Made of cold rolled steel; finished in black enamel, and hand decorated. Figures on dial are deeply stamped in metal and filled with enamel, making them very clear as well as indestructible.

No. 1000 Without Scoop

FIG 4899C.

No. 1000—Capacity 24 lbs. by 1 oz. silver finished dial, steel platform.

Each..... $1.75

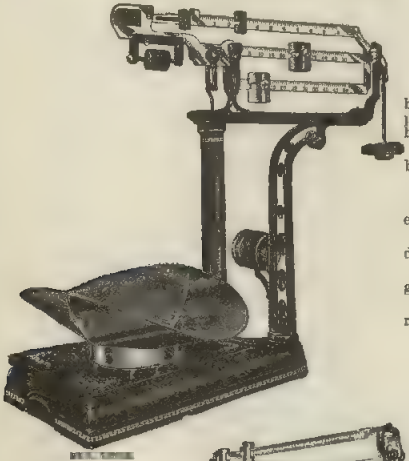
No. 1075—Capacity 24 lbs by 1 oz. silver finished dial polished tin scoop.

Each..... $2.00

No. 1075 With Scoop

FIG. 4899D.

COUNTER SCALES



AMERICAN JUDGE

Solid brass scoop, solid brass triple beams, brass patented sliding poises all heavily nickel plated.

Weighs up to 400 pounds by the ½ ounce.

Platform, 11¼ x 14½ in.

Bearings all case hardened tool steel. Steel levers.

Enameled in green and decorated in gold.

Accuracy and durability guaranteed.

Each in a wooden case ready for reshipment.

List price..each, $30.00

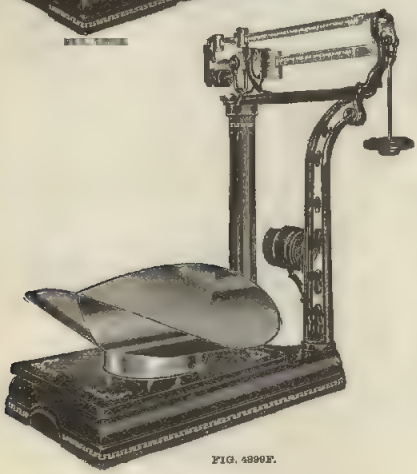


FIG. 4899F.

THE MASTER

Solid brass scoop, solid brass double beams, brass patent sliding poises.

Weighs up to 360 pounds by the ½ ounce.

Platform, 11¼ x 14½ inches.

Bearings all case hardened tool steel. Steel levers.

Enameled in vermilion, and decorated in gold.

Accuracy and durability guaranteed.

Extra heavy steel scoop for hardware can be supplied if so ordered.

Each in a wooden case ready for reshipment.

Can be furnished with all brass parts nickel plated if so desired.

List price each, $25.00

VIOLIN BOWS

No. 9167.

Nos. 933-935.

Your son or daughter will highly appreciate the gift of a musical instrument, which will broaden their knowledge, brighten and comfort your home. No home should be without an instrument of some description, which can be selected from this Catalog at the lowest price.

No. 9205 Maple, red painted, ebony frog, inlaid dot, bone slide and button ..... Each $1.10
No. 9259 Maple, black finished, bone frog, inlaid eye, bone slide and button ..... Each 1.25
No. 9280 Maple, dark red finish, ebony frog, inlaid dot, pearl slide German silver and ebony button..... Each 1.25
No. 9285 Maple, imitation snakewood ebony frog inlaid dot pearl slide German silver button. .. Each 1.30
No. 9263 Brazil wood, dark ra. color ebony frog, inlaid dot pearl slide, ivne button . . . Each 1.60
No. 9264 Cherry finish stick ebony frog, German silver full lined, pearl slide, pearl eye, button of German silver and ebony, silvered grip ..... Each 1.70
No. 923 Brazil wood, ebony frog pearl inlaid dot pearl slide German silver button . . . . . Each 1.85
No. 9278 Brazil wood, ebony frog, pearl inlaid dot, pearl slide, German silver button, very broad frog ..... Each 2.15
No. 9159 "L. Wenzel" Brazil wood leather grip ebony frog pearl slide pearl eye German silver lined German silver button Each 2.00
No. 9160 'L. Wenzel Brazil wood leather grip, ebony frog, pearl slide, pearl eye, full German silver lined, German silver button ..... Each 2.20
No. 929 "Tourte" Brazil wood, octagon stick, ebony frog pearl inlaid eye pearl slide, German silver lined German silver button ..... Each 2.45
No. 9107 Brazil wood ebony frog full German silver lined, German silver and ebony button, brown full leather, grip ..... Each 2.85
No. 9294 'Bausch." Brazil wood, ebony frog pearl eye pearl slide, full German silver lined German silver button, leather grip Each 2.95
No. 926 'Vuillaume. Brazil wood, ebony frog, double pear. eye, pearl slide, full German silver lined, German silver button, leather grip ..... Each 3.10
No. 933 Brazil wood imitation snakewood imitation ivory frog and button, double pearl eye, German silver line. Each 3.25
No. 935 Geo. Ne snakewood ivory frog double pearl eye German silver lined ivory tion Each 6.05
No. 9909 Remenj,' Brazil wood, dark color ebony frog double pearl eye, pearl slide Full German silver lined German silver button leather grip . . . . . Each 3.65

HALF SIZE.

No. 918 Brazil wood, ebony frog, leather grip, inlaid dot, pearl slide, bone button.. .. .. Each $1.65
No. 924 Brazil wood, ebony frog, leather grip, inlaid dot, pearl slide, German silver button, better quality... Each 1.80
No. 921 "L. Wenzel," Brazil wood, ebony frog, pearl slide, pearl eye, full German silver lined, German silver button . Each 2.10
No. 925 Pernambuco wood, ebony frog, pearl eye, full German silver lined, pearl slide, German silver button .. .. Each 3.65
No. 928 Pernambuco wood, ebony frog, pearl eye, full German silver lined, pearl slide, extra fine quality . . .. .. Each 5.60

THREE-QUARTER SIZE.

No. 930 Brazil wood, ebony frog, leather grip, inlaid dot, pearl slide, bone button ..... Each $1.85
No. 936 Brazil wood, ebony frog, leather grip, inlaid dot, pearl slide, German silver button, better quality ..... Each 1.95
No. 931 "L. Wenzel," Brazil wood ebony frog, pearl slide, pearl eye, full German silver lined, German silver button . . . Each 2.25
No. 937 Pernambuco wood, ebony frog, full German silver lined, pearl slide, German silver button.. ..... Each 3.65
No. 938 Pernambuco wood, ebony frog, full German silver lined, pearl slide, extra fine quality . . Each 5.85

VIOLONCELLO BOWS

No. 9410.

We insure safe delivery on all musical goods. No fear or hesitation necessary. All orders filled promptly upon receipt.

No. 9117 Maple, imitation snakewood, ebony frog, inlaid dot, slide and button . . . . . Each $1.45
No. 915 Brazil wood, plain ebony frog, bone button, good quality..... Each 2.00
No. 919 Brazil wood, ebony frog, inlaid dot, pearl slide, bone button. .. .. Each 2.20
No. 9122 Brazil wood, ebony frog, pearl eye, pearl slide, German silver button ..... Each 2.40
No. 9293 Brazil wood, ebony frog, double pearl eye, full German silver lined, pearl slide, German silver button..... Each 3.45
No. 9312 "Tourte," Pernambuco wood, octagon stick, ebony frog, pearl eye, full German silver lined pearl slide German silver button . . . . . Each 7.85
No. 936 'Vuillaume a Paris Pernambuco wood, ebony frog, double pearl eye, full German silver lined, pearl slide, German silver button . . . . . Each 5.85
No. 9440 "L. Bausch, Leipzig,' Pernambuco wood, ebony frog, double pearl eye, full German silver lined, pearl slide, German silver button . . . . . Each 11.00

MANDOLINS

No. 9602.

No. 91205 9 ribs, maple and walnut, inlaid sound-hole, tortoise celluloid guard plate, walnut finger-board, position dots, nickel-covered tail piece ..... Each $5.25

No. 91210 9 ribs, mahogany and walnut white inlay between, inlaid sound-hole, black celluloid guard plate, inlaid, cedar neck, rosewood finger-board, pearl position dots, nickel-covered tail piece ..... Each 7.00

No. 91211 11 ribs, dark mahogany finish, with black inlaying between, broad wood inlaying around sound-hole and edges, celluloid bound, hand rubbed, spruce top, solid mahogany neck, ebonized finger-board, ebony celluloid guard plate, pearl position dots, nickel-plated head, shell tail piece ..... Each 9.50

No. 91216 21 rosewood ribs, white inlay between, inlaid edges, bound with pearl and ebony cord pattern, pearl inlaid sound-hole, rosewood edge, tortoise celluloid guard plate, pearl butterfly inlaid, cedar neck, rosewood veneered head piece, ebony finger-board, pearl position dots, nickel-covered tail piece ..... Each 10.75

No. 91212 17 ribs, solid rosewood, full apron, natural colored mahogany neck, sound-hole and edges bound with fancy colored wood inlaying and white celluloid, handsomely inlaid guard plate, ebonized finger-board, pearl position dots, rosewood veneered head piece, shell pattern, metal tail piece ..... Each 13.75

No. 91214 17 ribs, bird's-eye maple and rosewood, full apron, natural finish, mahogany neck, spruce top, tortoise celluloid guard plate, neatly inlaid with butterfly, edges of apron, face and sound-hole neatly bound with attractively colored celluloid, handsomely colored variegated wood inlaying around sound-hole and edge, ebonized finger-board, inlaid with pearl position dots, rosewood veneered head piece, inlaid with fancy wood inlaying, aluminum sliding tail piece, neatly engraved, covered German silver patent heads, full engraved ..... Each 22.25

No. 91218 21 rosewood ribs, white inlay between inlaid edges, pearl inlaid sound hole, rosewood edge. Tortoise celluloid guard plate, pearl butterfly inlaid. Cedar neck, rosewood veneer head-piece. Solid pearl inlaid finger-board, nickel covered tail piece, N. P. patent heads.. Each 17 50

THE SALIENT FEATURES OF OUR MANDOLINS ARE:

1. Thoroughly seasoned material insuring durability
2. Highest class of workmanship throughout.
3. Every finger-board mathematically correct.
4. Superior tone quality arising from acoustically correct model
5. Smooth working patent heads with no "lost motion," i. e., the slightest turn of the screw is effective.

AMERICAN MAKE MANDOLINS.

No. 9501 9 ribs, dark mahogany finish, with black inlaying between, broad fancy colored wood inlaying around sound-hole and edge, celluloid bound, high varnish finish, spruce top, mahogany finish neck, rosewood finger-board and tortoise celluloid guard plate, pearl position dots, our own make nickel-plated patent head, nickel shell pattern tail piece ..... Each 8.25

No. 9502 9 ribs of solid mahogany, with black inlaying between, extended rosewood apron, high varnish finish, broad fancy colored wood inlaying around sound-hole and edge, celluloid bound, spruce top, mahogany finish neck, rosewood finger-board and tortoise celluloid guard plate, pearl position dots, our own make nickel-plated patent head, nickel shell pattern tail piece ..... Each 9.25

No. 9503 9 ribs of rosewood and maple, with red inlaying between, extended rosewood apron, hand polished, broad fancy colored wood inlaying around sound-hole, edge inlaid with corded inlaying and celluloid bound, spruce top, mahogany finish neck, veneered head piece, rosewood finger-board and tortoise celluloid guard plate, pearl position dots, our own make nickel plated patent head, nickel shell pattern tail piece ..... Each 11.75

No. 9601 9 ribs of rosewood, with white inlaying between, hand polished, broad fancy colored wood inlaying around sound-hole, edge inlaid with fancy colored corded inlaying and celluloid bound, fancy inlaid tortoise celluloid guard plate, mahogany neck veneered head piece, rosewood finger-board, pearl position dots, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece ..... Each 14.25

No. 9602 11 ribs of rosewood, white inlaying between, hand polished, broad fancy colored corded inlaying around sound-hole, edge inlaid with broad fancy colored corded inlaying and celluloid bound, tortoise celluloid guard plate, with neat inlaid design of colored wood and pearl, mahogany neck, rosewood veneered head piece, rosewood finger-board, pearl position dots, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece ..... Each 14.75

No. 9603 15 ribs of rosewood, white inlay between, hand polished, broad fancy colored corded inlaying around sound-hole and edge, celluloid bound edge and apron, tortoise celluloid guard plate handsomely white inlaid, mahogany neck, rosewood veneered head piece, ebony finger-board, pearl position marks, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece ..... Each 15.75

No. 9604 22 ribs of rosewood, with white inlay between, hand polished, extra broad fancy colored corded inlaying around sound hole and edge, celluloid bound edge and apron, tortoise celluloid guard plate, with fancy inlaid design, mahogany neck, fancy scroll head rosewood veneered, ebony finger-board celluloid bound, fancy pearl position marks, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece ..... Each 20.75

No. 9605 26 ribs of rosewood, with white inlay between, beautifully hand polished, extra broad fancy colored inlaying around sound-hole and edge, celluloid bound sound-hole, edge and apron, tortoise celluloid guard plate, with fancy pearl inlaid design, mahogany neck, fancy scroll head, ebony veneered, ebony finger-board celluloid bound, fancy pearl position marks, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece ..... Each 26.50

No. 9606. 25 ribs of rosewood, with white inlay between, beautifully hand polished, fancy pearl inlaying around sound-hole, fancy broad colored inlaying around edge, sound-hole, edge and apron bound with celluloid, tortoise celluloid guard plate, with fancy pearl inlaid design, mahogany neck, fancy scroll head ebony veneered, ebony finger-board celluloid bound, fancy pearl engraved position marks, our own nickel plated covered patent head, nickel plated combined wrist rest and tail piece ..... Each 45.25

No. 9607 43 ribs of rosewood, with white inlay between, beautifully hand polished, fancy pearl inlaying around sound-hole and edge, celluloid bound sound-hole, edge and apron, tortoise celluloid guard plate, with fancy pearl inlaid design, mahogany neck, fancy scroll head, ebony veneered, inlaid with pearl, ebony finger board, celluloid bound, fancy pearl engraved position marks, our own make nickel plated covered patent head, nickel plated combined wrist rest and tail piece ..... Each 55.75

12-STRING MANDOLINS.

No. 91502 12 strings, 9 ribs of solid mahogany with black inlaying between extended rosewood apron high varnish finish broad fancy colored wood inlaying around sound-hole and edge, celluloid bound, spruce top, mahogany finish neck, rosewood finger-board and tortoise celluloid guard plate, pearl position dots, our own make nickel plated patent head, nickel plated shell pattern tail piece. Each 12.00

No. 91603 12 strings, 15 ribs of rosewood, white inlay between, hand polished, broad fancy colored corded inlaying around sound-hole and edge, celluloid bound edge and apron, tortoise celluloid guard plate handsomely white inlaid, mahogany neck, rosewood veneered head piece, ebony finger-board, pearl position marks, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece ..... Each 18.25

FINE SOLID STERLING SILVERWARE. GUARANTEED 925/1000 FINE.

Illustrations are Reduced Size.

Manufactured by WATSON, NEWELL & CO.

Coffee Set, 3 pieces, plain thread edges, medium weight, burnished finish.

No. 4922	Complete set as illustrated	$82 80
	Separate pieces furnished at the following prices	
No. 4923	Coffee pot, height 7 ½ inches, ebony handle	Each $40 10
No. 4924	Cream Pitcher, satin lined, height 4¼ inches	" 16 85
No. 4925	Sugar Bowl, satin lined, height 4 inches	" 16 85

Coffee Set, Colonial pattern, 4 pieces, English thread edges, extra heavy.

No. 4926	Complete set as illustrated	$230.00
	Separate pieces furnished at the following prices:	
No. 4927	Coffee Pot height 9 inches	Each, $82 80
No. 4928	Sugar Bowl, gold lined, height 4½ inches	" 27 60
No. 4929	Cream Pitcher, gold lined, height 4¼ inches	" 27 60
No. 4930	Tray, diameter, 12 inches	" 92 00

5-piece Tea Set, large size, Colonial pattern, sterling silver burnished

No. 4931	Per set, complete	$368.00
	Separate pieces furnished at the following prices	
No. 4932	Coffee Pot, height 9½ inches	Each, $116 55
No. 4933	Tea Pot, height 8⅝ inches	" 107 35
No. 4934	Cream Pitcher, height 6 inches, gold lined	" 49 85
No. 4935	Sugar Bowl, height 8 inches	" 64 40
No. 4936	Waste Bowl, height 4½ inches	" 39 87

5-piece Tea Set. Same pattern as No. 4931, smaller size.

No. 4937	Per set, complete	$276 00
	Separate pieces furnished at the following prices	
No. 4938	Coffee Pot, height 8½ inches	Each, $82 80
No. 4939	Tea Pot, height 7⅝ inches	" 74 60
No. 4940	Cream Pitcher, height 5½ inches, gold lined	" 32 20
No. 4941	Sugar Bowl, height 7 inches	" 55 20
No. 4942	Waste Bowl, height 4¼ inches	" 32 20

HYDRAULIC JACKS—Continued.

DOUBLE "OUTSIDE PUMP" HYDRAULIC JACKS.

These Jacks have pumps with pistons ¾ in. and 1¼ in. in diameter, the larger giving about one third the pressure of the smaller, and working three times as fast.

They are used where there is a variety of work, or where the jack has to work under varying loads.

Jack to Lift	Inches.	Price.
60 tons	12	$340 00
100 "	12	400 00
125 "	12	460 00
150 "	12	525 00

Dimensions are same as Vertical Type.

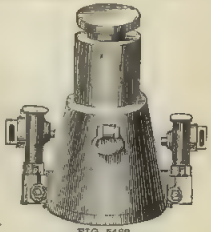


FIG. 5462.

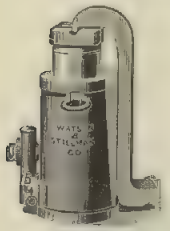


FIG. 5463

INDEPENDENT CLAW HYDRAULIC JACK.

OUTSIDE PUMP TYPE.

Jack to Lift	Inches.	Total Height.	Price.	Steel Claw. Extra Price.
60 tons	9	17½ in.	$220 00	$50 00
60 "	12	20½ "	240 00	55 00
100 "	9	17½ "	275 00	65 00
100 "	12	20½ "	300 00	70 00
125 "	12	20½ "	360 00	85 00
150 "	12	20½ "	425 00	100 00
200 "	9	19 "	450 00	120 00
200 "	12	22 "	500 00	135 00
250 "	12	22 "	575 00	160 00

HORIZONTAL HYDRAULIC JACKS.

Double Piston Pump and Rack and Pinion.

Return Action to Ram.

Power.	Movement.	Length.	Diam. of Base.	Weight.	Price.
60 tons	12 in.	22 in.	12 in.	350 lbs.	$265 00
100 "	12 "	22 "	13 "	475 "	325 00
125 "	12 "	22 "	14 "	590 "	385 00
150 "	12 "	22 "	15 "	830 "	450 00
200 "	12 "	23 "	15 "	1200 "	625 00

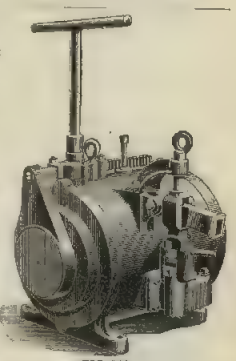


FIG. 5464.

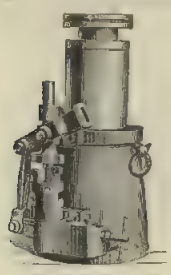


FIG. 5465.

DOUBLE PISTON "OUTSIDE PUMP" VERTICAL HYDRAULIC JACK.

For Pulling Oil Well Pipe.

The large piston will exert a pressure one third that of the smaller, and has a movement three times faster.

Jack to Lift	Raise.	Total Height.	Weight.	Diameter of Base.	Price.
60 tons	12 in.	20½ in.	380 lbs.	12 in.	$240 00
60 "	18 "	26½ "	430 "	13 "	260 00
100 "	12 "	20½ "	480 "	13 "	300 00
100 "	18 "	26½ "	530 "	14 "	310 00
125 "	12 "	20½ "	600 "	14 "	360 00
125 "	18 "	26½ "	700 "	15 "	400 00

HYDRAULIC JACKS—Continued.

"OUTSIDE PUMP" VERTICAL HYDRAULIC JACK.

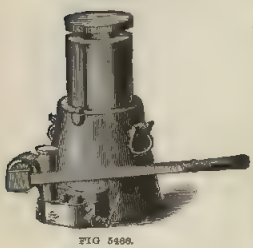


FIG 5466.

This style is used for Dry Docks, Wrecking, Pressing Flanges on Patent Wagon Wheel Hubs, Hauling Oil Well Pipes, etc.

Jacks to lift	Total height inches	Weight lbs.	Price	Extra length per in.
60 tons 9 in	17⅝	250	$220 00	
60 " 12 "	20⅝	348	240 00	
60 " 18 "	26½	400	260 00	
100 " 9 "	17⅝	360	275 00	
100 " 12 "	20½	445	290 00	
100 " 18 "	26½	545	340 00	
125 " 12 "	20½	600	350 00	
150 " 12 "	20½	800	425 00	
200 " 9 "	18	1000	451 00	
200 " 12 "	22	1200	504 00	
200 " 18 "	28	1500	575 00	

"OUTSIDE PUMP" HORIZONTAL HYDRAULIC JACKS.

These jacks are used in pushing crank-pins in and out, pushing bridges and similar heavy work. The lever is worked perpendicularly, instead of horizontally, as in other makes, thus adding fifty per cent to their power and ease of operation.

Jack to push	Price
60 tons 12 in	$240 00
100 " 12 "	300 00
125 " 12 "	390 00
150 " 12 "	425 00

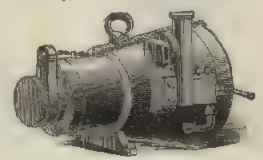


FIG. 5467

"OUTSIDE PUMP" REVERSED HYDRAULIC JACKS.

In press frames for use on work which was not convenient to put upon movable platens.

FIG. 5468.

Power to lift	Height	Diam. of base	Weight	Price
60 tons 12 in.	22	12	300	$240 00
100 " 12 "	22	12	400	300 00
125 " 12 "	22	14	475	390 00
150 " 12 "	23	15	600	425 00
200 " 12 "	24	18½	900	500 00
200 " 18 "	30	18½	1000	575 00

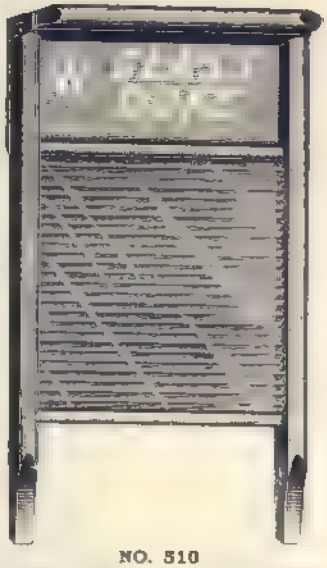
WASH BOARDS

NO. 413
Double Cable and Globe Crimp. Swing Protector. Family Size. Hardwood Frames.

No. **413** ..... Per dozen $6.10

"LABOR SAVER"
Solid Board. Aluminum Coated Steel Rubbing Surface Can be used on both sides.

"Labor Saver" ..... Per doz. $6.50
Half dozen in a Bundle.



NO. 510
"Glass Duke." Family Size. Hardwood Frames.

No. **510** ..... Per dozen $6.50

"SANI-STEEL"
Will not Shrink, Swell, Warp or Rust.
One Piece of Sheet Steel, Heavily Galvanized after forming; Bright Finish, Front and Back, Patented Convex Rubbing Surface, Extra Large, Roomy and Well-Drained Soap Rest.

"Sani-Steel" ..... Per dozen $7.20
Half dozen in a Bundle.

COTTON CLOTHES LINES

"EMORY" TWISTED

Length, feet	50	75
"Emory," Twisted ..... Per dozen	$2.00	3.00

One dozen in a Bundle.

"MELROSE" BRAIDED

Length, feet	50	75
"Melrose," Braided ..... Per dozen	$4.00	6.00

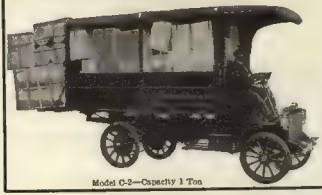
One dozen in a Bundle.

Sheet Metal Stamping
for Automobiles

Brake Drums, Wheel Flanges, Hub Caps, Ball Cups and Retainers, Hood Supports, Step Hangers, Brake Bands, Gear Covers, Universal Joint Covers, Clutch Discs.

These are only a few of the principal parts we make for automobiles.

The Crosby Company, Buffalo, N.Y.



Model C-2—Capacity 1 Ton

THE
STRENUOUS
RANDOLPH

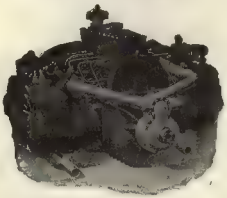
A live proposition from every point of view. Built in capacities ranging from 1000 lbs. to 5 tons.

Applications for Agencies in unassigned territory considered

RANDOLPH MOTOR CAR CO.
175 E. RANDOLPH ST., CHICAGO, U. S. A.

Don't Use Any Old Motor
In Your Business Wagons

HERE'S AN ENGINE DESIGNED AND BUILT PURELY FOR TRUCK PURPOSES



4 cyl., 5½ x 6"

Has 2½" crank shaft and is heavily built throughout. Guaranteed to stand the stresses and strains of commercial vehicle use.

Made Also in Two Cylinder

Send us your order. Our ample facilities will enable us to take care of it properly.

DAVIS MFG. CO.
15th Ave. and Park St. :: Milwaukee, Wis.

This business wagon gives excellent service because it is equipped with a

Westinghouse Vehicle Motor

They can be applied to any construction of wagon and will outlast the wagon. Wearing quality is one of their strong features.

How about those wagons of yours? Are they equipped with the right motors?

Send for Circular 1059

Westinghouse Electric & Mfg. Co.
Pittsburg, Pa.
Sales Offices in all Large Cities

AGENCIES WANTED EVERYWHERE
to sell
CROWN COMMERCIAL CARS

THE latest creation of the Motor Car World

We manufacture a complete line of Motor Trucks from 1000 lbs. to two ton carrying capacity and upwards.

TRANSMISSION: Individual multiple disc clutch type with differential, double chain drive.

MOTORS: Two and four cylinder.

Write for AGENCY Terms and Territory at once and be the first to put a CROWN in your TOWN.

Sales Department
CROWN COMMERCIAL CAR COMPANY
501 Broadway, Milwaukee, Wis.
FACTORY, NORTH MILWAUKEE

Van Dyke Delivery Wagon $750

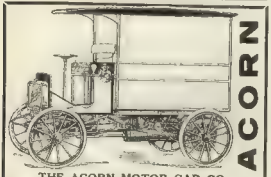
Viewed from any standpoint—as a prospective purchaser or a dealer in commercial cars—you can't match the "Van Dyke" quality, the "Van Dyke" prices, nor the wonderful "Van Dyke" efficiency, design, simplicity of construction, ease of operation, economy of up-keep or durability. In fact

Van Dyke Delivery Wagons

are in every feature incomparably superior to any commercial cars yet designed.

Investigate, write us and we will supply you with information which will prove a revelation to you.

The Van Dyke Motor Car Company
DETROIT, MICH.



ACORN

THE ACORN MOTOR CAR CO.
LOCK & EGGLESTON AVE., CINCINNATI, OHIO

Economy and Service

Any manufacturer or merchant—using two or more delivery wagons—can make a substantial *saving* and give his customers *better service* by installing

AMERICAN MOTOR TRUCKS

in place of horse-drawn vehicles. *If you will write us, stating your requirements, we will supply detailed information that will interest you.*

AMERICAN MOTOR TRUCK COMPANY,
Lockport, N. Y.

American

The Autocar

1910 TOURING-CAR, $1750 COMMERCIAL
LIMOUSINE TAXICAB DELIVERY WAGONS
Write for Catalogue
THE AUTOCAR CO., Ardmore, Pa.

Hewitt Trucks

2 to 10 TONS CAPACITY
Metzger Motor Car Co.
Formerly Hewitt Motor Co.
TRUCK DEPARTMENT, 6 E. 31st St., N. Y. City

WESTINGHOUSE STEAM-DRIVEN LOCOMOTIVE AIR COMPRESSORS

FOR GENERAL INDUSTRIAL PURPOSES

Compressor and Stand

FIG. 1012.

Standard Compressor

FIG. 1013.

Compressor as Attached to Column

FIG. 1014.

The constantly increasing demand for these compressors in all classes of industrial work is, in a large measure, due to their simplicity, neatness and compactness. They are attachable to wall, column, or can be mounted on floor, requiring no foundation. The fact that they are the recognized standard air compressors for railroads is, we believe, a sufficient guarantee of their reliability.

In point of design, it will be readily seen that the compressor is arranged vertically and consists of a steam and air cylinder joined together by a center piece. The main steam piston and air piston are both fastened to the same rod and move together as one piece. The supply and exhaust of steam to and from the steam cylinder is controlled by a distribution slide valve in connection with a main valve by which it is operated. The movements of the main valve are governed by a reversing valve which is actuated by the main piston. The valve motion is compact, being entirely within the top head, and all its parts are so arranged as to readily permit of their examination or replacement.

Size of Compressor	8 Inch	9½ Inch	11 Inch
Diameter of steam cylinder	8 inches	9½ inches	11 inches
" " air cylinder	8 "	9½ "	11 "
Stroke	10 "	10 "	12 "
Steam admission pipe	1 "	1 "	1 "
" exhaust "	1¼ "	1¼ "	1½ "
Air admission "	1½ "	1½ "	1½ "
" delivery pipe	1¼ "	1¼ "	1¼ "
Speed, single stroke per minute	120	120	100
Capacity, when operating under conditions of continuous service, at above speed, 90 lbs. pressure	20 cu. ft.	28 cu. ft.	45 cu. ft.
Over all dimensions	43 x 18 x 14 in.	43 x 18 x 14½ in.	51 x 19 x 16 in.
Weight, boxed for shipment	660 lbs.	630 lbs.	960 lbs.
List price	112.50	125.00	187.50

Also other sizes to meet special conditions of service.

When required for continuous service at pressures exceeding 100 pounds, we can furnish them with special water-jacketed air cylinder at an additional cost.

We can also furnish, if desired, the usual necessary auxiliaries for a compressor plant, such as pump governor, steam valve, reservoirs, air gauges, reducing valves, etc.

SMITH-VAILE DUPLEX AIR COMPRESSORS—CLASS K

Duplex Steam Compound Air Cylinder. Size 12 x 18 and 12 x 12

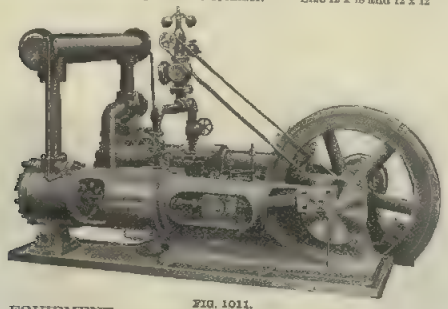


FIG. 1011.

EQUIPMENT:

Combination Speed and Pressure Regulator
Automatic Air Valves
Set of Special Wrenches required
Set of Oilers for Bearings
Sight-Feed Lubricators for Steam and Air Cylinders
Soleplate for 8 inch Stroke Compressors only
Inter-cooler for Compound Air Cylinders only

SPECIAL:

Myers' Cut-off Valve for Steam Cylinders
Mechanically Operated Inlet Valves for 12 inch Stroke Machines
Throttle Valve
Foundation Bolts
Soleplate for arger than 8 in. Stroke Compressors
Steel Lagging for Steam Cylinders furnished at additional price

COMPOUND STEAM AND AIR CYLINDERS

Size of Cylinders — Diameter H. P. Steam	L. P. Steam	L. P. Air	H. P. Air	Length of Stroke	Revolutions per Minute	Air Piston Sweep — Cubic Feet per Minute	Air Pressure, Pounds	Pipe Sizes — Steam — Steam	Steam — Exhaust	Air — Inlet	Air — Outlet	Telegraphic Cipher
10	15	16	10	12	100 to 150	270 to 400	100	2½	4	5	3	Noweda
10	18	18	12	12	100 " 150	350 " 525	100	3	4	5	3	Nowhast
12	18	18	12	12	100 " 150	350 " 525	100	3	5	6	3	Nowhawk

DUPLEX STEAM, CROSS COMPOUND AIR

8	..	14	8	8	100 to 150	140 to 210	100	2	3	4	2½	Nowacre
10	..	16	10	12	100 " 150	270 " 400	100	3	4	5	3	Nowager
12	..	18	12	12	100 " 150	350 " 525	100	4	5	6	3	Nowhay

DUPLEX STEAM AND DUPLEX AIR CYLINDERS

8	..	..	8	8	100 to 150	92 to 138	100	2	3	3½	3	Novab
8	..	..	10	8	100 " 150	140 " 210	70	2	3	4	3	Novabane
8	..	..	12	8	100 " 150	190 " 285	40	2	3	5	3½	Nove
10	..	..	10	12	100 " 150	210 " 315	100	3	4	4	3	Novelist
10	..	..	12	12	100 " 150	310 " 465	70	3	4	5	3½	Novelite
12	..	..	14	12	100 " 150	400 " 600	50	3	4	5	4	Novelty
12	..	..	12	12	100 " 150	310 " 465	100	4	5	6	4½	Novennial
12	..	..	14	12	100 " 150	400 " 600	70	4	5	6	4	Novercul
12	..	..	16	12	100 " 150	550 " 800	50	4	5	6	5	Novice
12	..	..	18	12	100 " 150	700 " 1000	40	4	6	7	5	Novicate

Write for prices on the above, or tell us your conditions and we will quote you on the best machine for your service.
Write for Special Compressor Catalog.

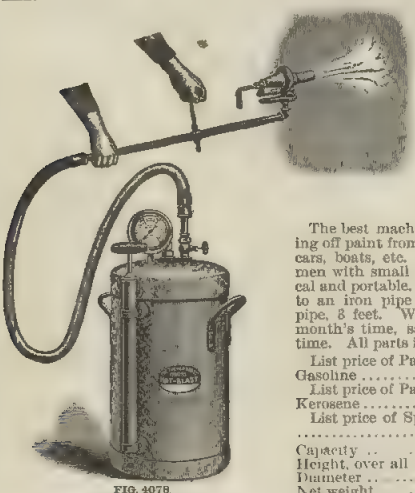


FIG. 4078

WHITE'S RAILWAY HOT-BLAST PAINT BURNER

FOR GASOLINE OR KEROSENE

No. 57

The best machine ever made for burning off paint from coaches, box cars, street cars, boats, etc. Will do the work of 7 men with small burners. Safe, economical and portable. The burner is attached to an iron pipe with handle, length of pipe, 8 feet. Will pay for itself in one month's time, saving in cost of oil and time. All parts interchangeable.

List price of Paint Burner without hose, Gasoline $40.00

List price of Paint Burner without hose, Kerosene $44.00

List price of Special Oil Hose, per foot, ... $0.75

Capacity ..... ten gallons
Height, over all ..... 18 inches
Diameter ..... 14 "
Net weight ..... 65 lbs.
Shipping weight ..... 85 "
Consumption ..... ½ gal. per hour

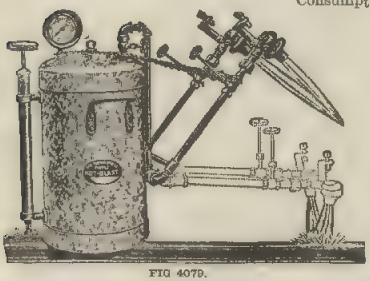


FIG 4079.

WHITE'S HOT-BLAST RAILWAY JOINT HEATER

No. 62

FOR KEROSENE

Capacity ..... ten gal.
Height, over all ..... 28 in.
Diameter ..... 14 "
Net Weight ..... 75 lbs.
Shipping Weight ..... 100 "
Consumption ..... ⅓ gal. per hr.

This machine has two powerful kerosene burners, mounted on a 10-gallon brazed tank, tested at 200 lbs. pressure per square inch, and will heat the rail red hot in 12 minutes. This temperature dispels all moisture and corrosion, ensuring a perfect amalgamation of the molten metal and the rail. The burners being mounted on swivel joints, are adjustable to the various forms of welded joints now in use. This machine has been adopted by all the firms doing Electric Rail-Joint welding, and is giving perfect satisfaction.

List price, including a torch for heating burners ..... each, $60.00

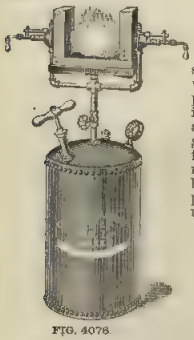


FIG. 4076.

NO. 1 BRAZIER

The tank, which has a capacity of ten gallons, is constructed of heavy steel with riveted seams and is then galvanized inside and out. The large, automatic brass air pump is screwed into the tank, thus protecting it from injury. A recessed filler plug, with washer, tightly fits a grooved collar, making an air tight joint. The pressure gage, specially made, is neat and accurate. Strong, powerful round burners, provided with needle points and easily regulated, produce an intense flame at the expense of but little gasoline. The brazier is fitted with a fire clay muffle, protecting the fire from draft and enabling a competent user to successfully do light brazing. This is a favorite fire.

List price complete $16.00
" of No. 1 Brazing Head, complete with Valve 8.00
" of Tank, complete with Pump, Gage and Filler Plug 11.00
Burners only ..... each, 2.50

WHITE'S COMBINATION BRAZIER AND FORGE

FOR GASOLINE OR KEROSENE

FIG. 4077.

No. 45.—This Brazier and Forge is an invaluable appliance for those engaged in the Manufacture of Bicycles, Repairers in Forging, Rivet Heating, etc. Especially adapted for Tool Makers. Made without pump if desired. Ordinary foot pump used for obtaining air pressure in that case. The flames are entirely blue, free from smoke and of great heat. Each flame can be regulated to suit the requirements of the operator. All generators are made of special Bronze. In ordering, always state whether for the use of gasoline or kerosene. Working pressure from 35 to 75 pounds.

LIST PRICE

Gasoline Brazier	with	Pump,	$34.00
" "	without	"	30.00
Kerosene "	with	"	40.00
" "	without	"	36.00
Gasoline Head			14.00
Kerosene "			16.00

Capacity ..... ten gallons
Height, over all ..... 38 inches
Diameter ..... 14 "
Net Weight ..... 80 pounds
Shipping Weight ..... 120 "
Consumption ..... 3 pints per hour

WINCHESTER REPEATING RIFLES

MODEL 1886-33 CALIBRE

Fig 8891A

Price, .33 Calibre, Solid Frame, 24-inch Round Nickel Steel Barrel weight about 7½ pounds, half or Full Magazine		each	25 00
" Same as above, Take Down Pattern		"	30 00

Half Magazine and Shot Gun Butt carried in stock. Full Magazine and Rifle Butt furnished on special order.

MODEL 1890 .22 CALIBRE

Fig. 8891B

RIFLE TAKEN APART

Fig. 8891C

Price, Take Down, Sliding Forearm Action, 24-inch Octagon Barrel, weight about 5¾ pounds, Calibre .22 Short, 15 Shots		each	16.00
" same as above, .22 Long, 12 Shots		"	16.00
" " " " .22 Winchester, 12 Shots		"	16.00

Chambered to hold one length of cartridge only. Size of cartridge stamped on the barrel of each gun.

MODEL 1892—44 CALIBRE

Fig. 8891D

Price, Sporting Pattern, 24-inch Round Barrel, Full Magazine, Pain Trigger, weight about 6¾ pounds, Calibre .44 Winchester, 14 Shots		each	18.00
" Same as above, Octagon Barrel, weight about 7 pounds		"	19.50

WINCHESTER REPEATING RIFLES

MODEL 1894

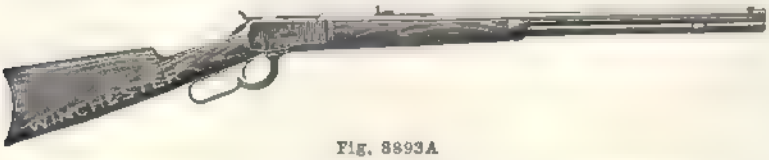


Fig. 8893A

MODEL 1894 TAKEN APART

Fig. 8893B

SOLID FRAME, PLAIN TRIGGER, FULL MAGAZINE

Price,	.32 Winchester Special, 26-inch Round Barrel, weight 8 pounds, 9 shots	each	23 00
"	.32 Winchester Special, 26-inch Octagon Barrel, weight 8 pounds, 9 shots	"	24 50
"	.30 Winchester, 26-inch Round Barrel, weight 8 pounds, 9 shots	"	23 00
"	.30 Winchester, 26-inch Octagon Barrel, weight 8 pounds, 9 shots	"	24 50
"	.25-.35, 26-inch Round Barrel, weight 8 pounds, 9 shots	"	23 00
"	.25-.35, 26-inch Octagon Barrel, weight 8 pounds, 9 shots	"	24 50
"	.38-.55, 26-inch Round Barrel, weight 7¾ pounds, 9 shots	"	18 00
"	.38-.55, 26-inch Octagon Barrel, weight 8 pounds, 9 shots	"	19 50
"	.32-.40, 26-inch Round Barrel, weight 7¾ pounds, 9 shots	"	18 00
"	.32-.40, 26-inch Octagon Barrel, weight 8 pounds, 9 shots	"	19 50

TAKE DOWN PATTERN, PLAIN TRIGGER, FULL OR HALF MAGAZINE

Price,	.30 Winchester Smokeless, 26-inch Round Barrel, weight 8 pounds, 9 shots	each	28.00
"	.30 Winchester Smokeless, 26-inch Octagon Barrel weight 8 pounds, 9 shots	"	29.50
"	.32 Winchester Special, 26-inch Round Nickel Steel Barrel, weight 8 pounds, 9 shots	"	28.00
"	.32 Winchester Special, 26-inch Octagon Barrel, weight 8 pounds, 9 shots	"	29.50

MODEL 1894 CARBINE

Fig. 8893C

Price,	.30 Winchester Smokeless, 20-inch Round Barrel, weight 6½ pounds 7 shots	each	21.00
"	.32 Winchester Special, 20-inch Round Barrel, weight 6½ pounds 7 shots	"	21 00

SHOT GUNS AND RIFLES

WINCHESTER, "TAKE DOWN" MODEL REPEATING SHOT GUNS

Fig. 8810A

Price,	Model 1897, Standard Solid Frame Gun, 12 gauge 30 or 32 inch Rolled Steel Barrel, Pistol Grip Stock, not Checked	each	25 00
"	Model 1897, "Take Down" Standard Gun, 12 gauge 30 or 32 inch Rolled Steel Barrel, Pistol Grip Stock not Checked	"	27 00
"	Model 1897, "Take Down" Standard Gun, 16 gauge, 28 inch Rolled Steel Barrel, Pistol Grip Stock not Checked	"	27 00

Weight of 12 gauge, about 7¼ pounds. Solid Frame, Full Choked Barrels, Stocks, 14¼ inches long, Drop at Comb 1¾ inches, Drop at Heel 2½ inches. Improved Cylinder, Rolled Steel Barrels for "Take Down" Guns 30 inches with Magazine, Forearm, etc. can be furnished.

Extra Barrels must be ordered at the factory. 16 gauge Guns are regularly made with 28 inch Barrels, weighing 6¾ pounds and are made in "Take Down" pattern only. 30-inch Barrels will be furnished on 12 gauge Guns. Unless otherwise ordered.

STEVENS FAVORITE, No. 17 RIFLE

Fig 8810B

Price,	22 Caliber, 22 inch Octagon Barrel, Case Hardened Frame, Solid Breech Block, Single Trigger, Rocky Mountain Front and Sporting Rear Sight, weight 4¼ pounds. Uses C B Caps, 22 Short, 22 Long, 22 Long Rifle and 22 Stevens Pope Armory Cartridges	each	6 00

WINCHESTER REPEATING RIFLES

MODEL 1907 SELF LOADING

Fig. 8892A

Price, .351 Caliber High Power, 20-inch Round Nickel Steel Barrel, Plain Walnut Pistol Grip Stock and Forearm, not checked, weight about 7¾ pounds	each	28.00

Shoots .351 Winchester, Self Loading Soft Point or Full Metal Patched Cartridges. These have a 180 grain bullet with an average velocity of 1,870 feet per second. Cartridges loaded with Smokeless Powder. The recoil of the explosion of the cartridge is utilized to eject the empty shell, cock the hammer and feed a fresh cartridge into the chamber. The working parts are of the strong, well tried toggle-lever action, which is easily operated. Standard gun is equipped with sporting front and rear sights. Open rear peep sight can be used if desired. Length over all 38 inches. Pistol grip stock is finished with a rubber butt plate, 13¾ inches long and has a drop of 4 inches at the comb and of 2¾ inches at the heel. Only 20-inch round nickel steel barrels can be furnished on these rifles but factory stocks checked or unchecked, or stocks of special dimensions, will be furnished on special order.

MODEL 1906

Fig. 8892B

Price, 24-inch Round Barrel, weight 5 pounds, Magazine holds 7 .22 Short or 12 .22 Long or 10 .22 Long Rifle Cartridges, Take Down Pattern	each	10.50

Fitted with sporting front sight and adjustable open rear sight; measures 35¼ inches overall, straight grip, stock 12⅝ inches long, furnished with rubber butt plate. Metal cleaning rod with each gun.

The Rogers & Hamilton WATERBURY, CONN. High Grade Silver Plated Flatware

Cuts Show Size of Tea Spoons.

Prices Quoted are Per Dozen.

ALL ROGERS & HAMILTON
Spoons AND Forks Have
The Rogers & Hamilton Co
WATERBURY, CONN.
TWO ADDITIONAL PLATES
ON PARTS MOST EXPOSED TO WEAR.

TIPPED PATTERN

Tea Spoons

No. Per doz

1996 XII Plate $4.72
1997 Triple " 9.67

Dessert Spoons

1998 XII Plate $ 8.33
1999 Triple " . 11.12

Table Spoons

2000 XII Plate $ 9.44
2001 Triple " . 13.34

Dessert Forks

2002 XII Plate $ 8.33
2003 Triple " . 11.12

Medium Forks

2004 XII Plate $ 9.44
2005 Triple " 13.34

FANCY PIECES NOT MADE IN TIPPED PATTERN

TUDOR FRENCH GRAY PATTERN

Tea Spoons

No. Per doz

2006 XII Plate $5.28
2007 Triple " . 7.22

Dessert Spoons

2008 XII Plate $ 9.44
2009 Triple " . 12.23

Table Spoons

2010 XII Plate $10.56
2011 Triple " . 14.44

Dessert Forks

2012 XII Plate $ 9.44
2013 Triple " . 12.23

Medium Forks

2014 XII Plate $10.56
2015 Triple " . 14.44

Sugar Shells

Each

2016 XII Plate $0.83

Butter Knives

2017 XII Plate $0.97

MARQUISE PATTERN

Tea Spoons

No. Per doz

2018 XII Plate $5.28
2019 Triple " . 7.22

Dessert Spoons

2020 XII Plate $ 9.44
2021 Triple " . 12.23

Table Spoons

2022 XII Plate $10.56
2023 Triple " 14.44

Dessert Forks

2024 XII Plate $ 9.44
2025 Triple " . 12.23

Medium Forks

2026 XII Plate $10.56
2027 Triple " . 14.44

Sugar Shells

Each

2028 XII Plate $0.83

Butter Knives

2029 XII Plate $0.97

ALDINE PATTERN

Tea Spoons

No. Per doz

2030 XII Plate $5.28
2031 Triple " . 7.22

Dessert Spoons

2032 XII Plate $ 9.44
2033 Triple " . 12.23

Table Spoons

2034 XII Plate $10.56
2035 Triple " . 14.44

Dessert Forks

2036 XII Plate $ 9.44
2037 Triple " . 12.23

Medium Forks

2038 XII Plate $10.56
2039 Triple " . 14.44

Sugar Shells

Each

2040 XII Plate $0.83

Butter Knives

2041 XII Plate $0.97

RAPHAEL PATTERN

Tea Spoons

No. Per doz

2042 XII Plate $5.28
2043 Triple " 7.22

Dessert Spoons

2044 XII Plate $ 9.44
2045 Triple " 12.23

Table Spoons

2046 XII Plate $10.56
2047 Triple " . 14.44

Dessert Forks

2048 XII Plate $ 9.44
2049 Triple " . 12.23

Medium Forks

2050 XII Plate $10.56
2051 Triple " . 14.44

Sugar Shells

Each

2052 XII plate. $0.83

Butter Knives

2053 XII plate $0.97

DORIC FRENCH GRAY PATTERN

Tea Spoons

No. Per doz

2054 XII Plate $5.28
2055 Triple " . 7.22

Dessert Spoons

2056 XII Plate $ 9.44
2057 Triple " 12.23

Table Spoons

2058 XII Plate $10.56
2059 Triple " . 14.44

Dessert Forks

2060 XII Plate $ 9.44
2061 Triple " . 12.23

Medium Forks

2062 XII Plate $10.56
2063 Triple " . 14.44

Sugar Shells

Each

2064 XII Plate $0.83

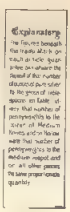
Butter Knives

2065 XII Plate $0.97

"WORLD BRAND" FLAT WARE

"WORLD BRAND" OF AMERICAN SILVER

The best quality of goods on the market. Highest grade and most artistic designs, on 18 per cent nickel base. The 6-ounce quality is plated 6 ounces of silver to the gross of tablespoons, and all other articles in proportion. Read guarantee herewith both sides.



PRICES PER DOZEN.

MELROSE PATTERN

French gray finish

Made in 14 oz. goods only.

Tea Spoons

No.	Dozen
1929 14-oz plate	$6.50

Dessert Spoons

1930 14 oz plate $ 1.00

Table Spoons

1931 14-oz plate $13 00

Dessert Forks

1932 14-oz plate $11 00

Medium Forks

1933 14-oz plate $13 00

Butter Knives

1934 14-oz plate $ 3.00

Sugar Shells

1935 14-oz plate $11 00

[illegible] PATTERN

French gray finish

Tea Spoons

No.	Dozen
1936 6-oz plate	$4.75
1937 14-oz plate	6.50

Dessert Spoons

1938 6-oz plate $ 8.50
1939 14 oz plate 11.00

Table Spoons

1940 6-oz plate $ 9 50
1941 14-oz plate 13.00

Dessert Forks

1942 6 oz plate $ 8 50
1943 14-oz plate 11.00

Medium Forks

1944 6-oz plate $ 9.50
1945 14 oz plate 13.00

Butter Knives (Best

1946 6-oz plate $8.00

Sugar Shells

1947 6-oz plate $9.00

MOSELLE PATTERN

French gray finish

Tea Spoons

No.	Dozen
1948 6 oz plate	$4.75
1949 14 oz plate.	6.50

Dessert Spoons

1950 6 oz plate $ 8.50
1951 14-oz plate 11 00

Table Spoons

1952 6-oz plate $ 9 50
1953 14-oz plate 13.00

Dessert Forks

1954 6-oz plate $ 8 50
1955 14-oz plate 11 00

Medium Forks

1956 6-oz plate $ 9 50
1957 14 oz plate 13.00

Butter Knives (Best

1958 6 oz plate $9.00

Sugar Shells

1959 6-oz plate $9.00

MONTICELLO PATTERN

Tea Spoons

No.	Dozen
1960 6-oz plate	$4.75
1961 14-oz plate.	6.50

Dessert Spoons

1962 6-oz plate $ 8.50
1963 14-oz plate 11 00

Table Spoons

1964 6 oz plate $ 9 50
1965 14-oz plate 13.00

Dessert Forks

1966 6 oz plate $ 8 50
1967 14-oz plate 11.00

Medium Forks

1968 6-oz plate $ 9.50
1969 14-oz plate 13.00

Butter Knives (Best)

1970 6-oz plate $9 00

Sugar Shells

1971 6-oz plate $9 00

TOURS PATTERN

Tea Spoons

No.	Dozen
1973 6-oz plate	$4.75
1973 14-oz plate.	6.50

Dessert Spoons

1974 6-oz plate $ 8.50
1975 14-oz plate 11.00

Table Spoons

1976 6 oz plate $ 9 50
1977 14 oz plate $13 00

Dessert Forks

1978 6-oz plate $ 8 50
1979 14-oz plate 11.00

[illegible] Forks

1980 6-oz plate $ 9 50
1981 14-oz plate 13.00

Butter Knives (Best

1982 6-oz plate $9.00

Sugar Shells

1983 6-oz plate $9 00

TIPPED [illegible]

Tea Spoons

No.	Dozen
1984 6 oz plate	$4.25
1985 14-oz plate.	6 00

Dessert Spoons

1986 6-oz plate $ 7 50
1987 14-oz plate 10 00

Table Spoons

1988 6-oz plate $ 8.50
1989 14-oz plate 12.00

Dessert Forks

1990 6-oz plate $ 7 50
1991 14-oz plate 10 00

Medium Forks

1992 6-oz plate $ 8 50
1993 14-oz plate 12 00

Butter Knives

1994 6-oz plate $8.00

Sugar Shells

1995 6-oz plate $8.00

SCHOOLS & COLLEGES.

PENNSYLVANIA.

PENNSYLVANIA MILITARY COLLEGE, Chester, Pa.

Courses leading to degrees in

Civil Engineering (C.E. ; Chemistry (B.S. ; Arts (A.B.,; also, Thorough Preparatory Courses of Study are offered, together with the physical benefits, moral stamina healthful diversion, and training in personal efficiency supplied by a military school of the best type. A national reputation for excellence of system and character of results. *48th Year begins Sept. 15th, 1909.* Catalogues of **Col. CHARLES E. HYATT, President.**

YEATES SCHOOL.

Established 1854—Endowed. Calls out the best in every boy by its high standard of honor, its home life, and thoroughness of training An enviable record in scholarship and athletics before and *after* entering college

FREDERIC GARDINER, A.M. (Harvard), Headmaster

BOX 524, LANCASTER, Pa

MAPLEWOOD.

Near Phila. 48th yr. Wakes up boys to duties of life $375 Dept. for Little Boys, 12 years and under, $325 Limited to 40 boys College or business. No tobacco. No hazing. Fine Gym Vacation from June 4 to Sept. 16 with or without instruction, $110. All outdoor sports. J. SHORTLIDGE, A.M., Yale, Principal.

BOX 27, CONCORDVILLE, Delaware Co., Pa.

FRANKLIN AND MARSHALL ACADEMY.

Founded 1787. Beautiful, healthful location. Enters about 40 boys to colleges each year. No smoking. Use of library, 55,000 volumes. New $100,000 building added. Ample grounds, gymnasium, athletic field. Terms $300 to $350 a year. Illustrated Catalogue.

T. G. HELM and E. M. HARTMAN, Principals. LANCASTER, Pa.

PHILLIPS BROOKS SCHOOL.

Boarding and Day School for Boys City and country advantages. Men teachers only. Gymnasium, athletic field For illustrated year-book, address

ALFRED C. ARNOLD, Headmaster,

4234 Baltimore Avenue, PHILADELPHIA Pa

CHESTNUT HILL ACADEMY.

A Boarding School for Boys

Situated among the hills bordering the upper Wissahickon valley, in a region noted for healthfulness and natural beauty

For Catalogue, address

JAMES L. PATTERSON, Head-Master,

CHESTNUT HILL, Pa.

WASHINGTON AND JEFFERSON ACADEMY.

College, University, or Technical preparation. Spacious grounds. Athletic field. Large gymnasium. New fire-proof dormitory. Home life. Fall term opens September 22. Rooms reserved now. For illustrated catalogue, address

JAMES N. RULE, Principal,

WASHINGTON, Pa.

PERKIOMEN SEMINARY.

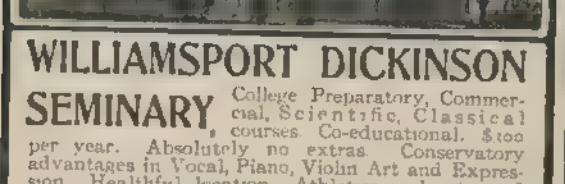
Co-educational. *New Buildings*, new gymnasium, campus, athletic field Small classes. *Honor men* in 30 colleges *Music*, *Elocution*. Strongly moral. No profanity, liquor, tobacco or hazing. $220 to $270. Catalogue free

Rev. O. S. KRIEBEL, D.D., Prin

BOX 100, PENNSBURG, Pa

We will insert your school advertisement in a space of this size, seven lines, at the following rates: one time, eight dollars and seventy-five cents; three times, eight dollars and thirty-one cents each insertion, twelve times, seven dollars each insertion

HARPER & BROTHERS, NEW YORK.



WILLIAMSPORT DICKINSON SEMINARY

College Preparatory, Commercial, Scientific, Classical courses. Co-educational. $100 per year. Absolutely no extras. Conservatory advantages in Vocal, Piano, Violin Art and Expression. Healthful location. Athletics under trained directors. Bowling, Swimming Pool. Two Gymnasiums. Term opens September 14th

WILLIAM PERRY EVELAND, Ph.D., Box 901, Williamsport, Pa.

Mercersburg Academy

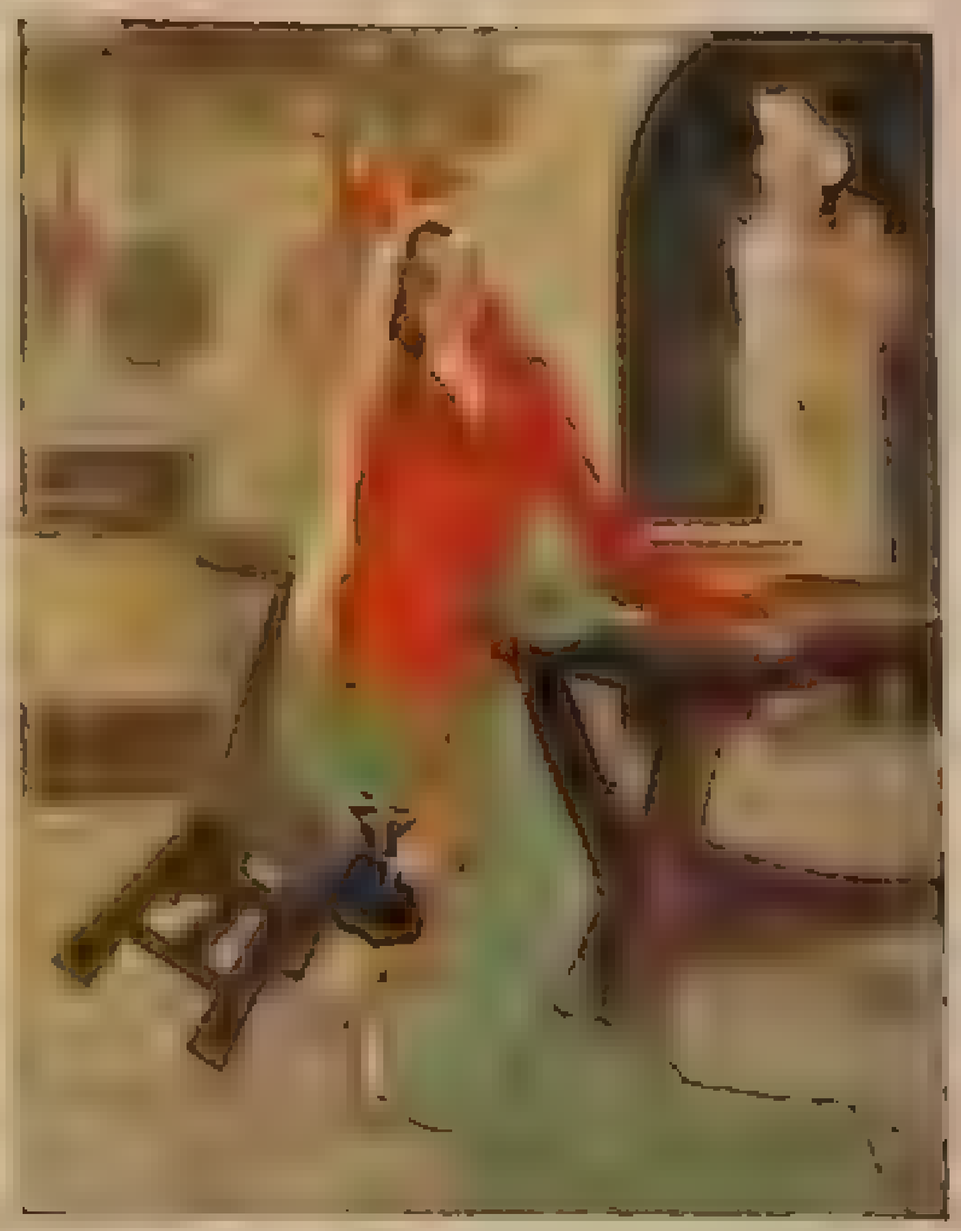
A school for boys, healthfully located in one of the most picturesque sections of Pennsylvania. Thorough instruction; college preparatory work being especially successful. Personal interest is taken in each boy, the aim being to inspire in every pupil the lofty ideal of thorough scholarship, broad attainments, sound judgment and Christian manliness. Modern buildings. Fine athletic field. For catalogue and further information address

William Mann Irvine, Ph.D., President,
MERCERSBURG, PA

When Good King Arthur ruled the land,
He was a goodly King:
He stole three pecks of barley meal
To make a bag pudding.

A bag pudding the Queen did make
And stuffed it well with plums:
And put therein great lumps of fat
As big as my two thumbs.

The King and Queen did eat thereof
And all the Court beside:
And what they could not eat that night
The Queen next morning fried.



When next the King did feast his Court
He spread a royal board:
Nor plums nor fat was served thereat
To tempt each Dame and Lord.

Yet when the Queen arose next morn
There was naught left to fry,
Whereat she sat upon a stool
And piteously did cry.

Of all that mighty feast was left
No single scrap to eat.
All had been valiant trencher-men.
For 'twas the **Cream of Wheat.**

HISTORY AS IT MIGHT HAVE BEEN

THE JUDGMENT OF SOLOMON

Stoddard-Dayton

1910

UPON the threshold of the motoring season of 1910, we desire to once more emphasize our strict adherence to our well-defined policy of

One Quality for All Models
One Price for All Buyers

Stoddard-Dayton car owners all over the land call this easily-understood policy "The Gospel of Fair Play." Upon this corner-stone we have successfully built. We *always* maintain Quality and *never* cut Price. With such a rule rigidly enforced, there can be but one result—SATISFACTION. The owner of a **Stoddard-Dayton** is safeguarded in his car before and after purchase. No greater protection is possible. Undoubtedly, the strict enforcement of this policy is responsible for the great sales-record of 1909.

The superiority of Valve-in-head motors—with which all STODDARD-DAYTON 1910 Models will be equipped—over the T-Head type, has been emphatically proved in practical performances and in contests on road, track and hill.

Outlined here in brief are a few points about the STODDARD-DAYTON 1910 line—all of which include magneto in equipment.

MODEL	Wheel Base	Wheels	Tires	H. P.	Passengers	PRICE
F	128	36	4½	50	7	$2,750
K	120	36	4	50	5	2,675
K	113	36	4	50	2	2,600
A	116	34	4	40	5	2,100
C	116	34	4	40	2	2,000
B	108	32	4	30	5	1,600
H	108	32	4	30	2	1,500

Tops are not included in the above prices.

Models K, C and H are furnished with various styles of bodies. In enclosed cars we offer Limousines, Landaulets, Town Cars, Cabs, Coupes etc., either large or small chassis—as you wish. Write for Catalog.

The Dayton Motor Car Company, Dayton, Ohio

Standard Manufacturers A. M. C. M. A.

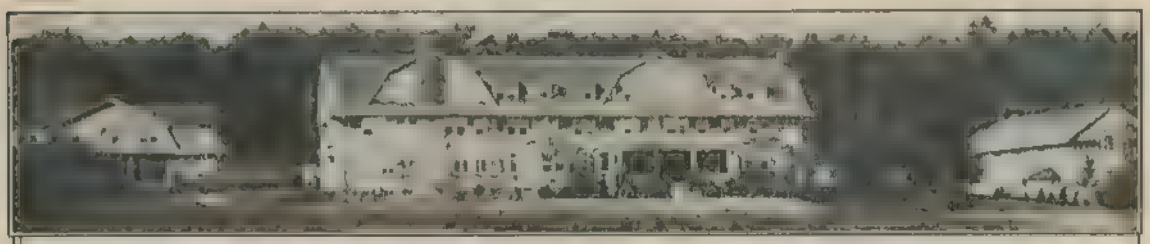
Stoddard-Dayton

Stoddard-Dayton

Stoddard-Dayton

SCHOOLS & COLLEGES.

PENNSYLVANIA (continued).



"A thorough and honest school, the kind of school to which sensible parents desire to send their sons"—BISHOP WHITAKER.

St. Luke's School for Boys

WAYNE, PA. (14 miles from Philadelphia)

For forty six years (26 years under present headmaster) St. Luke's has been eminently successful in preparing boys for college or for business. Attractive location, [illegible] beauty and freedom from undesirable influences. Buildings all new, [illegible] with swimming pool. Gymnasium, [illegible] acres. Athletic field has quarter-mile cinder track and facilities for all games. Terms $500 a year. Illustrated catalogue, address

CHARLES HENRY STROUT, A. M., Headmaster

GEORGE SCHOOL.

Under management of Society of Friends.
Thorough college preparation.
Beautiful grounds. 227 acres.
New Gymnasium and Laboratories
Large athletic field
Healthful location, 25 miles north of Philadelphia.
For catalog, address

JOSEPH S. WALTON, Ph.D., Principal,
GEORGE SCHOOL P. O., Bucks Co., Pa.

MISS WRIGHT'S SCHOOL FOR GIRLS.

School year begins September 30, 1909

For circular, address

LILA M. WRIGHT, Principal,
MRS. FLORENCE SCOTT WRIGHT, Associate Principal,
BRYN MAWR, Pa

MORAVIAN SEMINARY.

For Young Ladies.
Founded 1749. 160th year opens September 22d Address
THE PRINCIPAL,
BETHLEHEM, Pa.

THE HOLLIDAYSBURG SEMINARY.

Academic and college preparatory. Address (MRS.) CHARLOTTE LONSTOCK GRAY, B.D., A.M., Principal, Drawer G, Hollidaysburg, Pa

Wyoming Seminary

KINGSTON, PA.

Founded in 1844. Co-educational. Prepares for all the leading colleges, technical schools and U. S. Academies. Preparatory courses recommended by presidents of the leading Eastern Colleges. Efficient business course for training young people for business life. Departments of Music, Art and Oratory in charge of experienced instructors. Course for young ladies not wishing to go to college. Large faculty of specialists of many years' experience.

Healthfully located in the Wyoming Valley. Buildings substantial, and contain all the latest improvements. Fine gymnasium and athletic field. Yearly rates $350. School year begins September 15th. Catalogue upon request.

L. L. SPRAGUE, D.D., LL.D., President

CEDARCROFT SCHOOL.

Boys' College Preparatory School. 33 miles from Philadelphia. Receives limited number of boys between ages of 9 and 18. Thorough and skilled individual instruction. One master for every six boys. Manual training—Ideal home life—Table unusually good—Single rooms—125 acres. Former country home of Bayard Taylor—All athletics. Field Games and Swimming Pool—Electric light, steam heat, spring water—Catalogue on request—Telephone.

JESSE EVANS PHILIPS, A.M., Principal.
Box 300, KENNETT SQUARE, Pa

1908 FOOT BALL TEAM.

SWARTHMORE

Preparatory School

An Institution affording thorough preparation for College, Technical School, or Business. It is under the management and supervision of the Society of Friends, and is situated in the beautiful college and residence town of Swarthmore, on the P. R. R., less than a half-hour's ride from Philadelphia. Co-educational.

The buildings are commodious, and strictly modern; students are housed under the cottage system. Athletics are encouraged. Ample facilities for indoor and outdoor sports—splendidly equipped two-story gymnasium, and athletic field with running track.

Tuition and board $450. Year book mailed on request.

ARTHUR H. TOMLINSON, PRINCIPAL, SWARTHMORE, PA.

The Gentlemen's Outfitting Company

The Lottie Lane Paper Family

The Lottie Lane Paper Family

A New Series P

Cut along dotted lines and fold tabs and you will have a set of paper dolls and clothes

The Lettie Lane Paper Family

Cut along dotted lines on back and slip doll's head into the slot in the hat made. By passing an inch wide strip of cardboard around the waist of the lady, [illegible] stand.

Lettie Lane's Around-the-World Party

Cut along dotted lines on back and fold around edges. Slip the cardboard

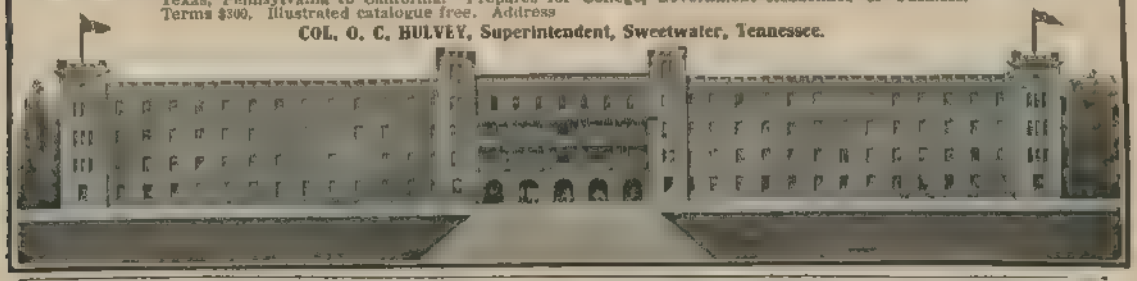
SCHOOLS & COLLEGES.

TENNESSEE.

TENNESSEE MILITARY INSTITUTE

On main line of Southern Railway in the mountains of East Tennessee—The Switzerland of America. Delightful climate. Outdoor exercise. Health record perfect. Thorough work. Small classes. Individual instruction. Safe, healthful location. Home influence. Encampments, cavalry trips, practice marches. Manly athletics. Fine athletic field. New buildings. Modern equipment. Steam heat, electric lights, pure spring water in every room. Hot and cold shower baths. Cadets from 35 states—Connecticut to Texas, Pennsylvania to California. Prepares for College, Government Academies or business. Terms $300. Illustrated catalogue free. Address

COL. O. C. BULVEY, Superintendent, Sweetwater, Tennessee.



TENNESSEE COLLEGE (FOR WOMEN).

Handsome new $75,000 building, 15-acre campus. Fine table. Healthful climate, highest educational traditions, Christian influence and home comforts. Trained nurse, physical culture, faculty of 28, individual attention, 251 enrolled last year. For catalogue, address GEO. J. BURNETT, Pres., or J. HENRY BURNETT, Gen. Mgr., 005 E. Main, MURFREESBORO, Tenn.

WARD SEMINARY for Girls and Young Women.

45th year. Seminary and Special Courses. College Preparation. Conservatory of Music. 175 Boarding Pupils. Complete appointments. City advantages. Outdoor sports. Delightful climate. For catalog, address

J. D. BLANTON, LL.D., President,

NASHVILLE, Tenn.

SOME magazines sell more than just "space." They sell INFLUENCE. Without INFLUENCE magazine space is no more valuable than wall space. It is the Harper INFLUENCE that makes Harper space valuable to you.

MISSOURI.

COTTEY COLLEGE FOR WOMEN.

Twenty-two year. Superior Intellectual Atmosphere. Modern equipment. Splendid faculty. Celebrated Conservatory. European method. Schools of Art, Expression, and Domestic Science. Select patronage. Ideal Christian home. Outdoor Sports. Reasonable rates. Address

Mrs. V. A. C. STOCKARD, Founder and Pres., NEVADA, Mo.

LINDENWOOD COLLEGE FOR WOMEN.

Established 1831. Offers College Courses, Music, and Art; has excellent Preparatory Department. Modern buildings throughout. Ideal climate; only 50 minutes from St. Louis. Terms $285 to $300.

Rev. GEORGE FREDERIC AYRES, Ph.D., President.

BOX 275, ST. CHARLES, Mo.

HOSMER HALL.

A School for Girls. Certificates admit to Vassar, Smith, Wellesley, etc. Academic and Special Courses. Limited home-school. 26th year opens September 23, 1909.

Miss M. NAIR, Principal,

4287 Washington Boulevard, ST. LOUIS, Mo.

CHRISTIAN COLLEGE FOR YOUNG WOMEN.

50th year. Located in "the Athens of the Southwest." 26 colleague[illegible] experienced instructors. 4 large, modern buildings. 20 acres campus for outdoor sports. Established patronage. *Certificates to Eastern Colleges.* For year-book, address

Mrs. LURLLA WILCOX ST. CLAIR, President, COLUMBIA, Mo.

BUFORD COLLEGE
Nashville, Tennessee

Limited, Select Home College for the Higher Culture of Women. Non-Denominational, Non-Sectarian. Thoroughly Christian. Enrollment Strictly One Hundred

Ideal location, excellent equipment, splendid opportunities. Sanitation practically perfect; no death in the history of the college. Beautiful highland campus of 25 acres. Athletics and physical culture emphasized. College garden, dairy, brewery, water plant, steam heat plant and laundry. Chalybeate and sulphur wells and cistern. Complete comprehensive curriculum of four-year courses in Literature, Mathematics, History, Natural Science, Philosophy, Religious Ancient Languages, Modern Languages, Music, Expression, Art, Practical Course, Journalism and Library Training, leading to corresponding degrees. University Bible Course. Conservatory advantages in Art, Music and Expression. Faculty of experienced University and Conservatory specialists, supplemented by resident Lecture Corps. Patronage—national and foreign, representing twenty-five states and five nationalities. Term opens Sept. 16, 1909. Write for Year-book A.

BR. R. G. BUFORD, Regent MRS. E. G. BUFORD, President

MISSOURI.

BLEES.

[illegible] Military Academy [illegible]

Fireproof buildings.

[illegible] acres of ground.

Superior athletic facilities.

[illegible]

Certificate admits to colleges and universities.

Fall term, September 22, 1909. Catalog.

THE BLEES MILITARY ACADEMY COMPANY,

MACON, Missouri.

TIFFANY & CO.

Tiffany & Co. wish to repeat their recent caution to the public that rings and other articles of jewelry sold elsewhere as of Tiffany manufacture or design are not made by them, as they are retail dealers exclusively and never employ agents or sell their products through other dealers

Persons, particularly those living at a distance, who are interested in the selection of diamond, pearl, fancy stone and other jewelry, silverware, watches, clocks, bronzes, marbles, china, glass, fancy goods, stationery, etc., are invited to write Tiffany & Co. stating as fully as possible their requirements and taste. All such inquiries will have the immediate attention of a specially organized Correspondence Department, and comprehensive replies giving prices and full descriptions, with photographs when necessary, will be promptly made

The Tiffany Blue Book, which is a complete catalogue of the stock in compact, indexed form, will be mailed upon request and will be found a helpful guide to intending purchasers. It contains no illustrations but gives in alphabetical order a brief description of each article with the limits of prices. These prices, if due consideration is given the quality of the goods, will be found notably reasonable and attractive

Fifth Avenue & 37th Street New York

SCHOOLS & COLLEGES.

VERMONT.

VERMONT ACADEMY — For Boys and Girls

An endowed school. Beautifully located in the foothills of the Green Mountains. College Preparatory, Music, Art and Commercial Courses. Certificate admits to colleges. Modern buildings. Separate dormitories for boys and girls. Fine athletic field, tennis and basket ball grounds. Military drill for boys. Table supplied from school farm; pure spring water. *Terms Moderate.*

For catalogue, address **GEORGE B. LAWSON, A. M., Principal, Saxtons River, Vermont.**

GODDARD SEMINARY.

In the heart of the Green Mountains. Co-educational. General and College Preparatory courses. Special courses in Art and Music. Modern buildings. Exceptional athletic training [illegible] dowment reduces cost to $200 a year.

ORLANDO K. HOLLISTER, Litt D., Principal, BARRE, Vt

We will insert your school advertisement

in a space of this size, seven lines, at the following rates: one time, eight dollars and seventy-five cents; three times, eight dollars and thirty-one cents each insertion; twelve times, seven dollars each insertion

HARPER & BROTHERS, NEW YORK

RHODE ISLAND.

MOSES BROWN SCHOOL — Formerly Friends School, PROVIDENCE, R. I.

VIEW OF GYMNASIUM

Founded in 1784

A School for Students from Good Homes

UPPER SCHOOL

[illegible]

Fine studio and strong course in arts and crafts. Manual training and manual training. Extensive [illegible] and swimming pool provide for physical development and sports.

LOWER SCHOOL—Entirely distinct department for younger boys preparing for the Upper School. For catalogue, address

SETH K. GIFFORD, Ph.D., Principal

MORRIS HEIGHTS SCHOOL.

A School for Boys. A Maker of Men

JOHN SHAW FRENCH, Ph D., Principal.

PROVIDENCE, R. I

THE EAST GREENWICH ACADEMY.

Founded 1802. Scholarship second to none. New Gymnasium. Athletic Field. Upper house rate $250. Special rate to deserving students. Junior House and distinct school for boys from 8 to 13 years of age. Rate $250. Address

CHARLES ALFORD STENHOUSE, A.M., President,

EAST GREENWICH, R. I.

We will insert your school advertisement

in a space of this size, seven lines, at the following rates: one time, eight dollars and seventy-five cents, three times, eight dollars and thirty-one cents each insertion; twelve times, seven dollars each insertion

HARPER & BROTHERS, NEW YORK

MAINE.

ABBOTT

A School for Boys

FARMINGTON, MAINE

Offers the natural attractiveness of the Rangeley Lake Region, the comforts of a city home, the quiet surroundings of an educational village—no manufacturing. Private Pullman car to and from Boston. A modern, well-equipped school preparing for college, scientific schools and business. Address

GEORGE DUDLEY CHURCH, Headmaster

MINNESOTA.

St. Mary's Hall

FARIBAULT, MINN.

A Home School For Girls

Established by Bishop Whipple in 1866

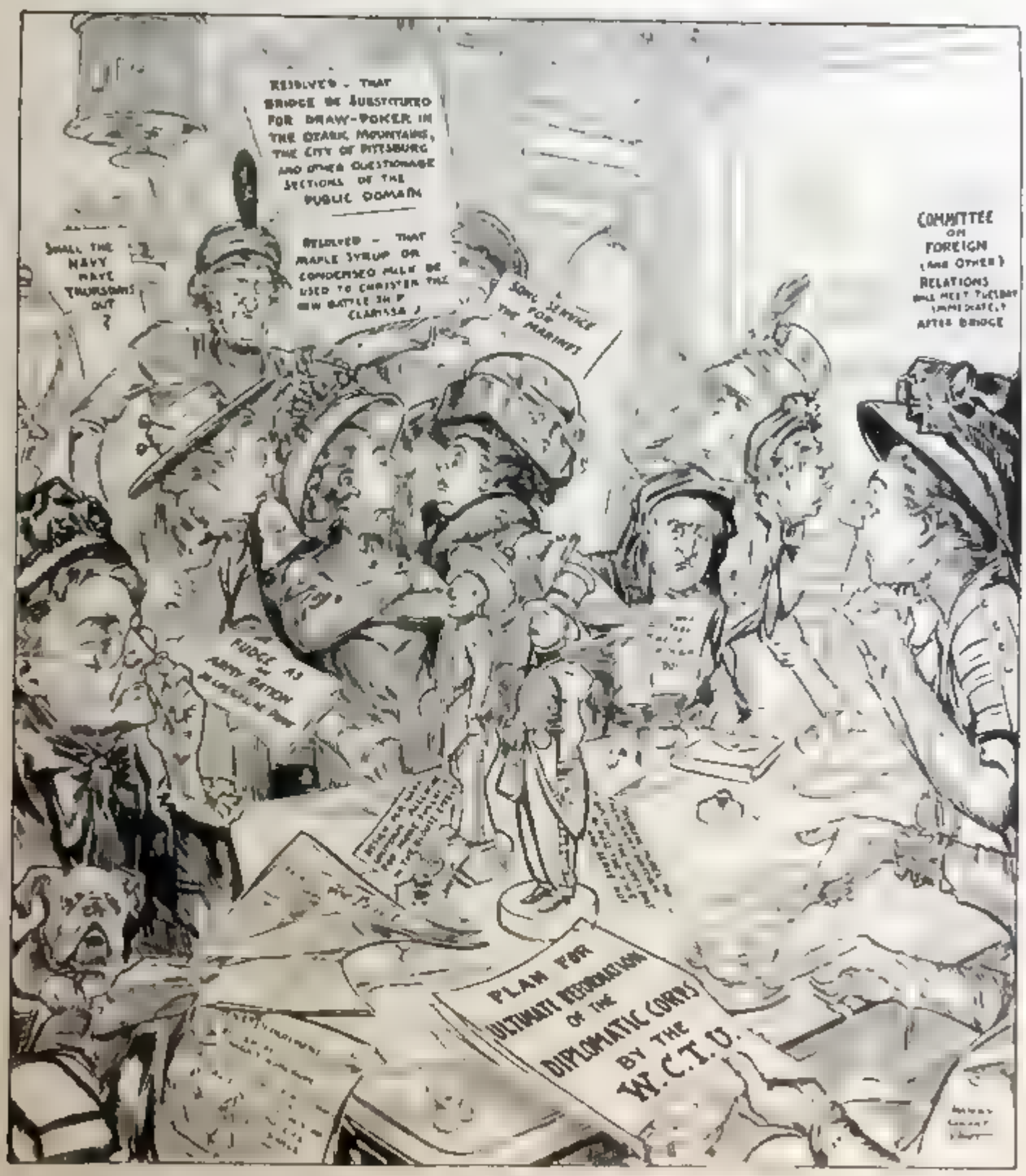
Healthful climate. Certificate admits to leading colleges. Special advantages in music and art. Physical Culture, etc.

Send for catalogue.

Rt. Rev. S. C. Edsall, D. D., L. L. D., Rector.
Miss Caroline W. Eells, Principal

THE HOME OF THE SUFFRAGETTE

AT THE WOMAN'S SUFFRAGE CLUB


RESOLVED - THAT BRIDGE BE SUBSTITUTED FOR DRAW-POKER IN THE OZARK MOUNTAINS, THE CITY OF PITTSBURG AND OTHER QUESTIONABLE SECTIONS OF THE PUBLIC DOMAIN
RESOLVED - THAT MAPLE SYRUP OR CONDENSED MILK BE USED TO CHRISTEN THE NEW BATTLE SHIP "CLARISSA"
SHALL THE NAVY HAVE TWENTY-SEVEN OUT?
SOME 32 MILES FOR THE MARINES
COMMITTEE ON FOREIGN (AND OTHER) RELATIONS WILL MEET TUESDAY IMMEDIATELY AFTER BRIDGE
FUDGE AS ARMY RATION
PLAN FOR ULTIMATE REORGANIZATION OF THE DIPLOMATIC CORPS BY THE W.C.T.U.

WHEN THE LADIES HAVE SECURED THEIR RIGHTS

Life's Suffragette Contest

$300 to the Winner

LIFE will pay the sum of Three Hundred Dollars for the best reason, or reasons, why any man should not marry a suffragette.

CONDITIONS.

Each answer must be limited to three hundred words. Manuscripts, however, may be as short as the contestant prefers.

Manuscripts must be typewritten, and should be addressed to

THE CONTEST EDITOR OF LIFE,
17 West 31st Street,
New York.

The contest is now on, and will close on December 31st, 1910. Manuscripts received after that date will not be considered.

LIFE will pay at its regular rates for all manuscripts published.

The prize will be awarded by the Editors of LIFE and the announcement will be made as soon after January 1st, 1911 as possible.

It is not necessary to be a regular subscriber to LIFE in order to compete. The contest is open to every one.

Manuscripts will not be returned unless accompanied by a stamped and addressed envelope.

XIII

A Man Should Not Marry a Suffragette Because

1. A suffragette is, in general merely an animated noise.
2. A suffragette is a person with a grievance which she takes out walking with her.
3. A suffragette has no sense of humor, and does not know how to laugh, because she is afraid of a gods.
4. A suffragette thinks the Supreme Court was pulling a leg when it declared suffrage to be a privilege and not a right, and has been practicing ever since a rival [illegible] ex.
5. A suffragette is [illegible] as thieves in Adullamosa with Mormons, Socialists and anarchists.
6. A suffragette believes that four hundred thousand suffragettes should regulate the status of forty-five million nonsuffragettes, and that the majority should not rule.
7. A suffragette believes in a helpless and irresponsible electorate legislating, which would be like a wardrobe trying to waltz, or a horse trying to play the fiddle.
8. A suffragette [illegible] without property privileges, and women with property privileges, and the class without property privileges must maintain the class with property privileges, which sounds like a Gilbert and Sullivan opera.
9. A suffragette thinks that suffrage has not been tested, when it has never faced war or revolution.
10. A suffragette wants to vote on naval, military and police affairs, shipping, navigation and other matters about which no woman knows no more than a eagle knows how to fly.
11. A suffragette is subject to the Berserker madness, and is often dangerous when [illegible] because.
12. A suffragette has succeeded in making [illegible] a man, but she has not succeeded in making herself a gentleman.
13. There are now 999,999 opportunities for disagreements in marriage, and [illegible] by adding suffrage.

Molly Elliot S[illegible]

XIV

Why Anyman Should Not Marry a Suffragette

O Anyman, the day is not yet near
When you may marry with the suffragette
For that keen eye you are not ready yet
You still are babbling over Woman's Sphere.
In Finland, so they say, men do not fear
To face their wives as equals, and to let
Their women nurse the laws which they beget,
But Finland is a long way off from here.
Safer for Anyman the household pet
Who for her little year dispenses charm
Who may be soundly counted on to quote
Her lord's opinions as the wisest [illegible]
Who never gives complacency alarm
Sans brains, sans outside interests, and sans vote.

Juliet Wilbor Tompkins

XV

Why Any Man Should Not Marry a Suffragette

BECAUSE

He would either be [illegible]ssed with her when he got her—and they don't always take [illegible] with himself.

[illegible]

In the first instance [illegible]

BECAUSE

If she proved to be a faithful wife, a devoted mother and fireside companion, as well as a woman [illegible] would have to hold her own in [illegible] as an educated [illegible] he would feel so immeasurably inadequate that he would hunt industriously [illegible] fluffy-ruffles" who would make him feel like something.

Anyhow! That the wrong man gets the wrong woman is a matter of daily record in the divorce courts!

E. Ramsey

XVI

Why No Man Should Marry a Suffragette

Whoever knows the many woes
A husband would be e[illegible]
The tears he'd shed were he to wed
Some [illegible] suffragette
Would warn a friend [illegible] his soul
Was fully consumm[illegible]
And spare a prayer for the awful fate
Of being so misu[illegible]

A wife for life is tough enough
Whatever the compensation,
And none would face the dire disgrace
Of [illegible] comparison
Unless [illegible] wear off rear
[illegible]
[illegible] to right degree
[illegible]

There's only one excuse I see
That marriage is solitude,
Why the boon of getting soon
To suffering inured
But not a touch of solace such
For those who in their madness
Set forth and get a suffragette
And then regret unless

Or if your spouse oft leave the house
To serve a term in prison
[illegible] brief successful release
Will mock you in derision
When each return renews the [illegible]
Of old wounds thus re[illegible]
The pain you fain would soothe in vain
Once marriage vows are spoken

[illegible]

Life's Suffragette Contest

III

I Would Not Marry a Suffragette—

Because when I wooed her a season ago,
And took her to stroll where the lichens entwined,
And caught her fair hand, which was whiter than snow,
And asked her to be Mistress—well, never mind;
And noted the rapture that sprang to her eyes
As she clutched the lapels of my newly pressed coat;
Because she replied, with the softest of sighs:
"Oh, first tell me, Jack, do you think I should vote?"

Of course, true love conquered my righteous dismay
And retrieved my poor heart as a dog does a bird.
I asked her a question; she answered me, "Aye,"
And life was again very sweet—and absurd.
To observe the conventions I sought her ma-ma,
And stammered my story with primly bowed head—
I caught her reply on the point of the jaw:
"Should women be given the suffrage?" she said.

A grim constitution, a surgeon's prompt aid
And three fingers of gin pulled me out of my swoon;
Against my weak will I again sought the maid,
And we fixed on the "knot" for the middle of June.
Well, we marched up the aisle to some "Promise Me" thing,
The audience grinned like buffoons at a play,
The rites reached the point where I fumbled the ring—
"Votes for Women!" the bride shrieked, then fainted away.

J. A. Brandt.

IV

$300 to the Winner

There are 300 best reasons "why any man should not marry a suffragette," 150 of these being womanly reasons, 150 manly.

The first of the "womanly" reasons, having been compounded into the two words: "just because . . ." makes the other 149 intrinsic, irrelevant and immaterial.

The first "manly" reason is best expressed with the left foot on the rail (and a comma between): "why, because . . ."

This powerful, forceful, jamful, masterful argument dispenses with the recapitulation of the second 149 of the 300 best reasons—

Q. e. d.

Dr. Berthold A. Baer.

V

Why Should a Man Not Marry a Suffragette?

A Man Does Not Want to Marry a Suffragette

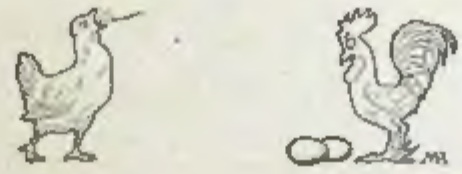
A man married
Against his will,
Acts as if
He were single still.

But verily, why should a man drag a woman down from the high career of looking at long strips of paper, and yea, even of marking them with X in various places, down, down, from this her high delight, when all he needs is but a little woman just to hearten him up so that he may go out into the world and fight a good fight.

To drag her, yea, by force to take her, from the platform of many nights and a glass of ice water, when the little woman will come and make for him a place called home, where he may rest for better fighting on the morrow, and where the good that they do may live after them in the lives of their children.

Children? Verily, children bother not the house of a suffragette, for a woman cannot serve both the child and the ballot.

So if she be a suffragette, marry her not, oh, man, for 'tis better to dwell in the corner of the house-top than live with a balloting woman.—*Mrs. A. T. Merrdith.*



$300 to the Winner

LIFE will pay the sum of Three Hundred Dollars for the best reason, or reasons, why any man should not marry a suffragette.

CONDITIONS:

Each answer must be limited to three hundred words. Manuscripts, however, may be as short as the contestant prefers.

Manuscripts must be typewritten, and should be addressed to

THE CONTEST EDITOR OF LIFE,
17 West 31st Street,
New York.

The contest is now on, and will close on December 31st, 1910. Manuscripts received after that date will not be considered.

LIFE will pay at its regular rates for all manuscripts published.

The prize will be awarded by the Editors of LIFE, and the announcement will be made as soon after January 1st, 1911, as possible.

It is not necessary to be a regular subscriber to LIFE in order to compete. The contest is open to every one.

Manuscripts will not be returned unless accompanied by a stamped and addressed envelope.

VI

Why Any Man Should Not Marry a Suffragette

(With Apologies to Solomon, King of Israel)

Because she will do him evil and not good all the days of her life.
The heart of her husband cannot safely trust in her.
She seeketh not wool nor flax, nor worketh willingly with her hands.
She considereth a field and buyeth it not, but spendeth her substance for votes.
She girdeth not her loins with strength, but bindeth her brow with brass.
She goeth abroad by night, and her husband abideth alone.
She freeth her hands from the spindle, and her hands lay hold on the ballot.
She stretcheth out her hands to the poor; yea, she handeth out wine and cigars.
She maketh herself no coverings; her clothing is bought at men's shops.
Trousers and vests are her clothing, and she shall weep in the time to come.
She openeth her mouth with guile, and in her tongue is the law of graft.
No children rise up to call her blessed; her husband also praiseth her not.
Many daughters have done foolishly; but thou surpassest them all.
Favor is deceitful, and beauty vain; but fear thou not—thou hast neither of these.

H. H. Ballard.

VII

The Consequences

Who yokes up with a suffragette,
Will spend his life in vain regret;
Will seek divorce, upon my oath,
Or go stark crazy, one or both.
The reasons he should hesitate
To so unite, are few and great;
This woman has a stubborn will,
She talks too much, she won't keep still.
No prof'table domestic art
Has any room in her cold heart.
Her plans are all to save the State,
And in no manner contemplate
Help for the man she vowed one day
To love, to honor and obey.
The suffragette is not refined;
The bent of her expanding mind
Leads far away from such a life
As sanctifies the helpful wife.
The drift of her ideas and cares
Is all away from home affairs.
Her manners grow severe and cold,
Race-suicide is her best hold;
And, while she may at times elect
To treat her husband with respect;
To "soak" the poor, unhappy Turk
For cash to carry on the work,
In speech she never is exempt
From outward signs of her contempt.
So by and by his life is wrecked,
He loses all his self-respect
And, later, finds he cannot stir
Up very much respect for her.
This life is one long night of gloom
For him—he 'waits the crack of doom
Calmed by the hope that when he goes
To take his turn at death's repose,
'Twill be his fate to slumber deep
And long—to find eternal sleep;
In the great silence to forget
He ever wed a suffragette.

A. L. Bixby.

(Concluded on page 895)

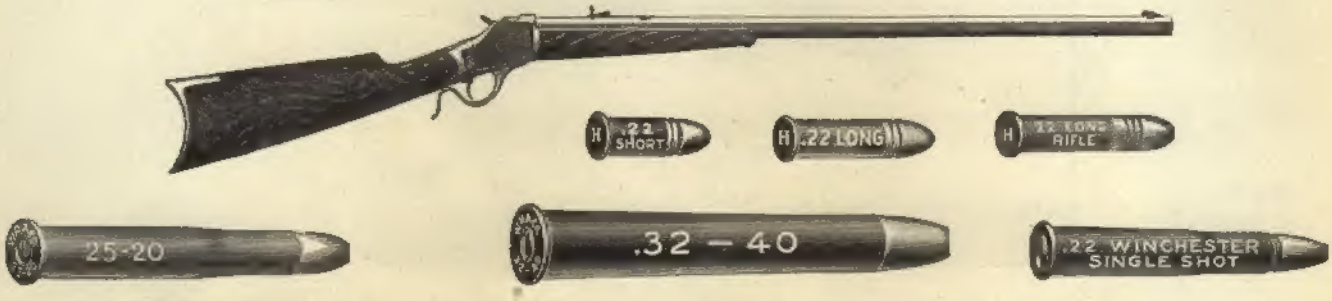
LIFE

REGULAR WOMEN'S TICKET
FOR DISTRICT LEADER:
KATRINA van D. SCHERMERHORN
VOTE FOR MABEL TRUELOVE FOR SODA-FOUNTAIN INSPECTOR

Reform Candidate: OH, GIRLS! HERE'S A STUPID TELEGRAM SAYING THAT BOBBIE O'BRIEN WOMAN IS ELECTED. I DON'T BELIEVE IT. I DON'T SEE HOW SHE *can* BE, BECAUSE EVER AND EVER SO MANY OF THE GIRLS SAID THEY *were* GOING TO VOTE FOR ME, AND SHE—THINK OF SUCH TERRIBLE MORE OF THAT ONE HAT OF HERS!

Single Shot Rifles.

WINCHESTER.



Plain Trigger, Steel Barrel, Plain Walnut Stock.

		Each
No. 270—	22 Caliber Short Rim Fire Cartridge, 24 in. Octagon Barrel, Weight About 6⅞ Lbs.	$16.00
No. 271—	22 Caliber Long Rim Fire Cartridge, 24 in. Octagon Barrel, Weight About 6⅞ Lbs.	16.00
No. 272—	25-20 Caliber Center Fire Cartridge, 28 in. Octagon Barrel, Weight About 7 Lbs.	16.00
No. 276—	32-40 Caliber Center Fire Cartridge, 30 in. Octagon Barrel, Weight About 10 Lbs.	16.00
No. 277—	22 Caliber Center Fire Cartridge, 26 in. Octagon Barrel, **Take-Down**, Weight About 7 Lbs.	19.00

All 22 and 25 Caliber Single Shot Rifles will be furnished with a Bronzed Iron Cleaning Rod; other Calibers with a Slotted Hickory Rod.

Self-Loading Rifles.

WINCHESTER SELF-LOADING, MODEL 1905.

Take Down.

		Each
No. 0532—	32 Caliber Winchester Self-Loading, 22 in. Round Barrel, Plain Walnut Stock and Fore-Arm, Not Checked, 6 Shots, Weight About 7½ Lbs.	$26.00
No. 0535—	35 Caliber Winchester Self-Loading, 22 in. Round Barrel, Plain Walnut Stock and Fore-Arm, Not Checked, 6 Shots, Weight About 7½ Lbs.	26.00

Magazines.

		Each
Extra Magazines—	Complete for 32 and 35 Caliber Self-Loading Rifles	$1.50

The Winchester Model 1905 Self-Loading Rifle is made with Blued Trimmings, and is fitted with Sporting Front and Rear Sights. The stock is 14 in. long and finished with a Rubber Butt Plate; drop at comb 1⅜ in., drop at heel 2¼ in., length over all 40 in.

The recoil of the exploded cartridge ejects the empty shell, cocks the hammer and feeds a fresh cartridge from the magazine into the chamber. The magazine is of the box type and holds five cartridges. By inserting a cartridge in the chamber before placing the loaded magazine in the gun, the operator can have six shots at his disposal. In using the Winchester Self-Loading Rifle it is absolutely necessary to pull the trigger for each shot, which places its operation as completely under the control of the operator as that of any repeating rifle.

Self-Loading Rifles.

WINCHESTER SELF-LOADING, MODEL 1907.

"The Gun That Shoots Through Steel."

.351 Soft Point Bullet.

Before Firing.

.351 Soft Point Bullet.

After Firing into Soft Pine Boards. Penetration 13 Boards.

As the illustration shows, the soft point bullet mushrooms well, giving great shocking effect upon animal tissue.

Take Down.

Each

No. 5351—351 Caliber High Power, 20 in. Round Nickel Steel Barrel, Plain Walnut Pistol Grip Stock and Fore-Arm, Not Checked, 6 Shots, Weight About 7¾ Lbs. $28.00

Magazines.

Each

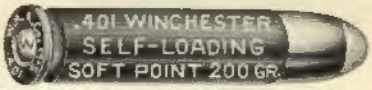
Extra Magazines—For Model 1907 Self-Loading Rifles..... ..... $1.50

The Winchester Model 1907 Self-Loading Rifle is equipped with Sporting Front and Rear Sights, but a Rear Peep Sight can also be used if desired. It measures in length over all 38 inches. The Pistol Grip Stock is finished with a Rubber Butt Plate, is 13⅞ inches long, and has a drop of 1¾ inches at the Comb and of 2¾ inches at the heel. Only 20 inch round nickel steel barrels can be furnished on these Rifles; but fancy Stocks, checked or unchecked, or Stocks of special dimensions, can be furnished at the same list prices charged for such extras on other models.

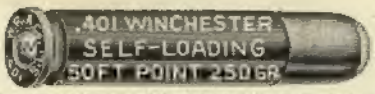
The Mode of Operation is the same as that of the Model 1905.

The Rifle shoots a Cartridge of .351 Caliber, with 180 Grain Bullet, having a Muzzle Velocity of 1861 feet per second. It will penetrate a Steel Plate one-quarter of an inch thick or twenty-six ⅞ inch dry Pine Boards, when used with Metal Patched Bullets; and thirteen ⅞ inch dry Pine Boards, when used with Soft Point Bullets.

WINCHESTER SELF-LOADING, MODEL 1910.



.401 Caliber Cartridge with 200 Grain Soft Point Bullet.



.401 Caliber Cartridge with 250 Grain Soft Point Bullet.

Take Down.

Each

No. 5401—401 Caliber, 20 in. Round Nickel Steel Barrel, Plain Walnut Pistol Grip Stock and Fore-Arm, Not Checked, 5 Shots, Weight About 8¼ Lbs..... ..... $30.00

Magazines.

Each

Extra Magazines—For Model 1910 Self-Loading Rifle..... ..... $1.50

The Winchester Model 1910 Self-Loading Rifle is equipped with Sporting Front and Rear Sights. It measures in length over all 38 in. The Pistol Grip Stock, finished with a Rubber Butt Plate, is 13⅞ in. long and has a drop of 1¾ in. at the comb and of 2¾ in. at the heel. Only 20 in. Round Nickel Steel Barrels can be furnished on these Rifles, but fancy stocks, checked or unchecked, or stocks of special dimensions can be furnished at the same list price charged for such extras on other models.

The Model 1910 Rifle is loaded by recoil, it being only necessary to pull the trigger for each shot. The recoil of the exploded cartridge ejects the empty shell, cocks the hammer and feeds a fresh cartridge from the magazine into the chamber. This places the complete control of the rifle under the trigger finger and makes it unnecessary to take the eye off the sights when shooting rapidly. A positive trigger lock, conveniently located in the trigger guard permits carrying the rifle at full cock with safety. The position of this lock can be readily determined either by sight or feeling. When the lock is off, it shows a red band as a warning.